

# THE LIVING AGE.

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## THE VOICE OF BELLS.

BY PATRICK SCOTT, ESQ.

HARK ! the voice of bells is sending  
 Welcome through the stricken air ;  
 Loud welcome to the brave and fair  
 To the nuptial altar wending,  
 One—two—three ! list the warning,  
 A wedding-day  
 Drives care away,  
 Let the world be glad this morning.

Hark ! again, with funeral toll,  
 Those metal tongues are swinging :  
 Wherefore do ye fright my soul ?  
 Oh ! stop your mournful ringing.  
 Nay—the brave man died contending  
 For his outraged native isle :  
 And should we, hearing, sigh or smile  
 When young life hath such an ending ?  
 One—two—three ! list the warning,  
 And think of earth  
 As little worth,  
 For a soul hath pass'd this morning.

*She* it was who just hath died ;  
*He*, 'mid the foeman's slaughter,  
 Perish'd distant from his bride  
 By all the Atlantic water.  
 Sigh or smile we at this story ?  
 She, in little time, loved well—  
 He, torn from dearest earth-tries, fell  
 Wedded to immortal glory.  
 One—two—three ! list the warning,  
 Some wear away  
 Life's idle day,  
 Some die nobly in the morning.

—*Constitutional Press Magazine.*

Part of an Article in Blackwood's Magazine.  
 SIR BULWER LYTTON'S CHARACTER OF  
 MACAULAY.

BY SIR BULWER LYTTON.

THE effects he studied by the words were made,  
 More than the art with which the words were  
 said.

Perhaps so great an orator was ne'er  
 So little of an actor ; half the care  
 Giv'n to the speaking which he gave the speech  
 Had raised his height beyond all living reach ;  
 Ev'n as it was, a master's power he proved  
 In the three tests—he taught, he charmed, he  
 moved.

Few compass one ; whate'er their faults may be,  
 Great orators alone achieve the three.

Best in his youth, when strength grew doubly  
 strong,  
 As the swift passion whirl'd its blaze along ;  
 In riper years his blow less sharply fell,  
 Looser the muscle, tho' as round its swell ;  
 The dithyram sobered to didactic flow,  
 And words as full of light had less of glow.  
 Take then his best : and first the speakerview,  
 The bold broad front pale'd to the scholar's hue,  
 And eye abstracted in its still, clear blue.  
 Firm on the floor he sets his solid stand,  
 Rare is his gesture, scarcely moves a hand ;  
 Full and deep-mouthed, as from a cave pro-  
 found,

Comes his strong utterance with one burst of  
 sound,

Save where it splits into a strange, wild key,  
 Like hissing winds that struggle to be free.  
 And at the close, the emotions, too repress  
 By the curb'd action, o'erfatigue the breast,  
 And the voice breaks upon the captive ear,  
 And by its failure, proves the rage sincere.  
 His style not essay, if you once admit  
 Speech as sense spoken, essay as sense writ ;  
 Not essay—rather, argued declamation,  
 Prepared, 'tis true, but always as oration.  
 A royal eloquence, that paid, in state,  
 A ceremonious visit to debate.  
 As unlike Burke as mind could be to mind,  
 He took one view—the broadest sense could  
 find—  
 Never forsook it from the first to last,  
 And on that venture all his treasure cast.  
 Just as each scene throughout a drama's plan  
 Unfolds the purpose which the first began,  
 His speaking dramatized one strong plain  
 thought,  
 To fuller light by each link'd sentence brought,  
 A home-truth deck'd—where, led but by the  
 star,  
 Burke, sailing on, discovered truths afar.  
 He triumph'd thus where learning fails the most,  
 Perplexed no college, but harangued a host—  
 Minds the most commonplace rejoiced to view  
 How much of knowledge went to things they  
 know.  
 From ground most near their own trite house-  
 hold walls,  
 His Lamp's kind Genius raised its magic halls

## A MEMORY.

A SINGLE chord, struck by a careless hand,  
 How strange that it should bring me back  
 again  
 A melody of Home and Father-land,  
 Restore to memory words, and tone, and  
 strain !

A tender accent, but a trick of words,  
 And I had almost heard her earnest voice :  
 Strange how the color of the past accords  
 With some faint shadow on our present joys !

A passing glance, a clear eye seeking mine,  
 I felt the hot blood rushing to my heart ;  
 So had *she* looked : but as I gazed, the sign  
 Melted away, the stranger had no part—

No part with her, no claim upon my love,  
 No sympathy to mark her as my own :  
 My hopes are buried, funeral-dust above,  
 And dust below, a tomb all lichen-grown.

Stay ! it is coming back so clear and sweet,  
 That wondrous dream of youth ; that glowing  
 past.

Memory's low tones the plaintive words repeat,  
 Soft, indistinct, an accent on the last.

Yes ; round the last sad scene is gathered light,  
 The crimson that one marks at evening's close,  
 The golden lining to the clouds of night,  
 Faith's tender blessing on our bitterest woes.

—*Lady's Companion.*

From The Edinburgh Review.

1. *On the Origin of Species by Means of Natural Selection, or the Preservation of Favored Races in the Struggle for Life.* By Charles Darwin, M.A. 8vo. 1859.
2. *On the Tendency of Varieties to depart Indefinitely from the original Type.* By Alfred Russel Wallace. (February, 1858.) Proceedings of the Linnæan Society, August, 1858.
3. Buffon, *Histoire de ses Travaux et de ses Idées.* Par P. Flourens, Sec. Perp. de l'Académie des Sciences. 12mo. 1846.
4. *Contributions to the Natural History of the United States.* By M. Agassiz. 4to. Vol. 1. (1. Essay on Classification.) 1857.
5. *On the Flora of Australia, etc.* By Dr. Joseph D. Hooker, F.R.S. (Introductory Essay.) 4to. 1859.
6. *Essays on the Spirit of the Inductive Philosophy and the Philosophy of Creation.* By the Rev. Baden Powell. 12mo. 1855.
7. *Hétérogénéité, ou Traité de la Génération Spontanée.* By Professor V. A. Pouchet. 8vo. Paris, 1859.
8. *Recherches sur l'Archetype et les Homologies du Squelette Vertébré.* Par Professor R. Owen. 8vo. Paris, 1855.
9. *Address to the British Association, Leeds.* By Professor R. Owen. 8vo. 1858.
10. *Palæontology; or a Systematic Summary of Extinct Animals, etc.* By Professor R. Owen. 8vo. 1860.

IN the works above cited the question of the origin, succession, and extinction of species is more or less treated of, but most fully and systematically by the accomplished naturalist who heads the list. Mr. Charles Darwin has long been favorably known, not merely to the Zoological but to the Literary World, by the charming style in which his original observations on a variety of natural phenomena are recorded in the volume assigned to him in the narrative of the circumnavigatory voyage of H.M.S. Beagle, by Capt. Fitz Roy, F.R.S. Mr. Darwin earned the good opinion of geologists by the happy applications of his observations on coral reefs\*, made during that voyage, to the explanation of some of the phenomena of the changes of level of the earth's crust. He took high rank amongst the original explorers of the minute organization of the invertebrate animals, upon the appearance of his

\* On the Structure and Distribution of Coral Reefs, 8vo. 1842.

monographs, in the publications by the Ray Society, on the Cirripedia, Sub-classes Lepadidæ (1851), and Balanidæ (1854). Of independent means, he has full command of his time for the prosecution of original research: his tastes have led him to devote himself to Natural History; and those who enjoy his friendship and confidence are aware that the favorite subject of his observations and experiments for some years past has been the nature and origin of the so-called *species* of plants and animals. The octavo volume of upwards of five hundred pages which made its appearance towards the end of the last year, has been received and perused with avidity not only by the professed naturalist, but by that far wider intellectual class which now takes interest in the higher generalizations of all the sciences. The same pleasing style which marked Mr. Darwin's earliest work, and a certain artistic disposition and sequence of his principal arguments, have more closely recalled the attention of thinking men to the hypothesis of the inconstancy and transmutation of species, than had been done by the writings of previous advocates of similar views. Thus several, and perhaps the majority, of our younger naturalists have been seduced into the acceptance of the homeopathic form of the transmutative hypothesis now presented to them by Mr. Darwin, under the phrase of "natural selection."

Dr. Joseph Hooker, in his latest work, above cited, writes:—

"In the Introductory Essay to the New Zealand Flora, I advanced certain general propositions as to the origin of species, which I refrained from endorsing as articles of my own creed; amongst others was the still prevalent doctrine that these are, in the ordinary acceptation of the term, created as such, and are immutable. In the present essay I shall advance the opposite hypothesis, that species are derivative and mutable, and this chiefly because, whatever opinions a naturalist may have adopted with regard to the origin and variation of species, every candid mind must admit that the facts and arguments upon which he has grounded his convictions require revision, since the recent publication by the Linnæan Society of the ingenious and original reasonings and theories of Mr. Darwin and Mr. Wallace."—P. ii.

Mr. Darwin claims another convert in an older name of scientific note: in reference to the immutability of species, he tell us, "I have reason to believe that one great authority, Sir Charles Lyell, from further reflection,"

tion, entertains grave doubts on this subject." For our own part, governed by the motto of the parent society for the promotion of natural knowledge, "nullius in verba," our attention was principally directed, in the first perusal of Mr. Darwin's work, to the direct observations of nature which seemed to be novel and original, and to the additional grounds, based on fact, on which a more lasting superstructure of the theory of the mutability of species might be raised. These observations, therefore, claim our notice before we proceed to discuss the general theory of the work.

No naturalist has devoted more painstaking attention to the structure of the barnacles than Mr. Darwin. In reference to the transitions of organs, and the probability of their conversion from one function to another, he states:—

"Pedunculated cirripedes have two minute folds of skin, called by me the ovigerous frena, which serve, through the means of a sticky secretion, to retain the eggs until they are hatched within the sack. These cirripedes have no branchiæ, the whole surface of the body and sack, including the small frena, serving for respiration. The Balanidæ or sessile cirripedes, on the other hand, have no ovigerous frena, the eggs lying loose at the bottom of the sack, in the well-enclosed shell; but they have large folded branchiæ. Now I think no one will dispute that the ovigerous frena in the one family are strictly homologous with the branchiæ of the other family; indeed, they graduate into each other."—P. 191.

That is, a series of modifications are affirmed to have been met with in different species, changing a respiratory into an ovigerous organ. Should this graduation of parts be confirmed, and the respiratory function of the folded membranes in Balanidæ be determined, Mr. Darwin will have contributed both an interesting observation, and a valuable discovery. But neither in the present work, nor in the two volumes published and illustrated at the cost of the Ray Society, are those relations of the folded membranes in the Balanidæ with the heart or vascular system demonstrated, which could alone prove the respiratory function of such membranes.

Mr. Darwin has by no means limited himself to dissections of dead animals, but has devoted much time to observation of the living. Desirous of testing the truth of the assertions respecting the slave-making ants (*Formica sanguinea*), he opened

"fourteen nests of that species and found a few slaves in all. Males and fertile females of the slave species (*Formica fusca*) are found only in their proper communities, and have never been observed in the nests of *F. sanguinea*. The slaves are black, and not above half the size of their red masters, so that the contrast in their appearance is very great. When the nest is slightly disturbed, the slaves occasionally come out, and, like their masters, are much agitated and defend the nest: when the nest is much disturbed and the larvæ and pupæ are exposed, the slaves work energetically with their masters in carrying them away to a place of safety. Hence, it is clear, that the slaves feel quite at home. During the months of June and July, on three successive years, I have watched for many hours several nests in Surrey and Sussex, and never saw a slave either leave or enter a nest. During the present year, however, in the month of July (1859), I came across a community with an unusually large stock of slaves, and I observed a few slaves mingled with their masters leaving the nest, and marching along the same road to a tall Scotch fir-tree, twenty-five yards distant, which they ascended together, probably in search of aphides or cecis. According to Huber, who had ample opportunities for observation, in Switzerland, the slaves habitually work with their masters in making the nest, and they alone open and close the doors in the morning and evening; and, as Huber expressly states, their principal office is to search for aphides. Another day my attention was struck by about a score of the slave-makers haunting the same spot, and evidently not in search of food; they approached and were vigorously repulsed by an independent community of the slave species (*F. fusca*); sometimes as many as three of these ants clinging to the legs of the slave-making *F. sanguinea*. The latter ruthlessly killed their small opponents, and carried their dead bodies as food to their nest, twenty-nine yards distant; but they were prevented from getting any pupæ to rear as slaves. I then dug up a small parcel of the pupæ of *F. fusca* from another nest, and put them down on a bare spot near the place of combat; they were eagerly seized, and carried off by the tyrants, who perhaps fancied that, after all, they had been victorious in their late combat."—P. 221.

Many other direct observations on the *F. sanguinea* of England are recounted, and are contrasted with those first recorded by Huber, relative to the slave-holding *F. rufescens* of Switzerland.

"Such are the facts, though they did not need confirmation by me in regard to the wonderful instinct of making slaves. Let it be observed what a contrast the instinctive habits of *F. sanguinea* present with those of the *F. rufescens*. The latter does not build its own nest, does not determine its own migrations, does not collect food for itself or its young, and cannot even feed itself: it is absolutely dependent on its numerous slaves. *F. sanguinea*, on the other hand, possesses much fewer slaves, and in the early



part of the summer extremely few. The masters determine when and where a new nest shall be formed, and when they migrate the masters carry the slaves. Both in Switzerland and England the slaves seem to have the exclusive care of the larvæ, and the masters alone go on slave-making expeditions. In Switzerland the slaves and masters work together, making and bringing materials for the nest: both, but chiefly the slaves, tend, and milk, as it may be called, their aphides; and thus both collect food for the community. In England the masters alone usually leave the nest to collect building materials and food for themselves, their slaves, and larvæ. So that the masters in this country receive much less service from their slaves than they do in Switzerland."—P. 223.

The instincts of the bee have received not less attention from Mr. Darwin than those of the ant; and he has also enriched this interesting part of natural history by new and original remarks.\* Desirous of testing the mechanical hypothesis of the formation of the hexagonal cell, out of an original cylindrical form, by pressure of surrounding cylinders, Mr. Darwin

"separated two combs, and put between them a long, thick, square (rectangular?) strip of wax; the bees instantly began to excavate minute circular pits in it; and as they deepened these little pits they made them wider and wider until they were converted into shallow basins, appearing to the eye perfectly true or parts of a sphere, and of about the diameter of a cell. It was most interesting to me to observe that wherever several bees had begun to excavate these basins near together, they had begun their work at such a distance from each other, that by the time the basins had acquired the above stated width (*i.e.* about the width of an ordinary cell), and were in depth about one-sixth of the diameter of the sphere of which they formed a part, the rims of the basins intersected or broke into each other. As soon as this occurred, the bees ceased to excavate, and began to build up flat walls of wax on the lines of intersection between the basins, so that each hexagonal prism was built upon the festooned edge of a smooth basin, instead of on the straight edges of a three-sided pyramid as in the case of ordinary cells."—P. 228.

With regard to the mechanical origin of the bee's cell, Mr. Darwin proceeds to say:—

"In one well-marked instance, I put the comb back into the hive, and allowed the bees to go on working for a short time, and again examined the cell, and I found that the rhombic plate had been completed, and had become *perfectly flat*; it was

\* In the remarkable volume recently published by Lord Brougham, entitled "Tracts, Mathematical and Physical," which have been produced by his lordship at various times from the year 1796 to the year 1858, will be found an excellent paper on the mathematical structure of bees' cells, read before the National Institute of France, by Lord Brougham, in the French language, in May, 1858. It is a scientific and literary curiosity.

absolutely impossible, from the extreme thinness of the little rhombic plate, that they could have effected this by gnawing away the convex side; and I suspect that the bees in such cases stand in the opposed cells and push and bend the ductile and warm wax (which, as I have tried, is easily done) into its proper intermediate plane, and thus flatten it.

"From the experiment of the ridge of vermillion wax, we can clearly see that if the bees were to build for themselves a thin wall of wax, they could make their cells of the proper shape, by standing at the proper distance from each other, by excavating at the same rate, and by endeavoring to make equal spherical hollows, but never allowing the spheres to break into each other."—P. 230.

Mr. Darwin, while collecting objects of natural history in the rivers of Brazil, was surprised at the similarity of the fresh-water insects, shells, etc., and at the dissimilarity of the surrounding terrestrial beings, compared with the fauna of Great Britain, and he was led to ponder on this power, as it seemed, in fresh-water productions, of ranging widely. He offers many ingenious suggestions to account for the phenomena, and gives, what is of greater value, the following original observation and experiment:—

"Two facts which I have observed—and no doubt many others remain to be observed—throw some light on this subject. When a duck suddenly emerges from a pond covered with duckweed, I have twice seen these little plants adhering to its back; and it has happened to me in removing a little duckweed from one aquarium to another, that I have quite unintentionally stocked the one with fresh-water shells from the other. But another agency is perhaps more effectual: I suspended a duck's feet, which might represent those of a bird sleeping in a natural pond, in an aquarium, where many ova of fresh-water shells were hatching; and I found that numbers of the extremely minute and just hatched shells crawled on the feet, and clung to them so firmly that when taken out of the water they could not be jarred off, though at a somewhat more advanced age they would voluntarily drop off. These just-hatched molluscs, though aquatic in their nature, survived on the duck's feet, in damp air, from twelve to twenty hours; and in this length of time a duck or heron might fly at least six or seven hundred miles, and would be sure to alight on a pool or rivulet, if blown across sea to an oceanic island or to any other distant point."—P. 385.

The mud adhering to the feet of wading birds may serve to transmit species of aquatic plants far away from their native streams.

"I do not believe (writes Mr. Darwin) that botanists are aware how charged the mud of ponds is with seeds. I have tried several little experiments, but will here give only the most striking case. I took, in February, three tablespoonfuls of mud from three different points beneath the water, on the edge of a little pond.

This mud, when dry, weighed only six and three-fourths ounces. I kept it covered up in my study for six months, pulling up and counting each plant as it grew. The plants were of many kinds, and were altogether five hundred and thirty-seven in number; and yet the viscid mud was all contained in a breakfast cup! Considering these facts, I think it would be an inexplicable circumstance if water-birds did not transport the seeds of fresh-water plants to vast distances, and if consequently the range of these plants was not very great. The same agency may have come into play with the eggs of some of the smaller fresh-water animals."—P. 386.

Facing the difficulty of the transport of fresh-water or land shell-fish across long tracts of ocean, on the supposition of a transporting bird occasionally resting on, or dipping in, the salt sea, or in the case of such shells adhering to drifted timber, Mr. Darwin made more experiments, and found—

"That several species did in this state withstand uninjured an immersion in sea-water during seven days: one of these shells was the *Helix pomatia*, and after it had again hybernated I put it in sea-water for twenty days, and it perfectly recovered. As this species has a thick calcareous operculum, I removed it, and when it had formed a new membranous one, I immersed it for fourteen days in sea-water, and it recovered and crawled away."—P. 397.

Pigeons being monogamous, and proverbial for their constancy, are peculiarly favorable for experiments and practices establishing and propagating varieties. Such varieties consequently have become, under the selective care of man, numerous and extreme. Believing it to be best, in reference to the question of the origin of varieties, to study some special group, Mr. Darwin took up domestic pigeons, associated himself with several eminent pigeon-fanciers, and joined two of the London Pigeon Clubs. He gives descriptions of the leading varieties: and amongst his own observations, the following, perhaps, conveys the newest matter:—

"As the evidence appears to me conclusive, that the several domestic breeds of pigeon have descended from one wild species,—the Rock-pigeon (*Columba livia*).—I compared young pigeons of various breeds, within twelve hours after being hatched; I carefully measured the proportions (but will not here give details) of the beak, width of mouth, length of nostril and of eyelid, size of feet and length of leg, in the wild stock, in pouters, fantails, runts, barbs, dragons, carriers, and tumblers. Now some of these birds, when mature, differ so extraordinarily in length and form of beak, that they would, I cannot doubt, be ranked in distinct genera, had they been natural productions. But when the nestling birds of these several breeds were placed in a row, though most of them could be distinguished from each other, yet their proportional differences in the above specified several points

were incomparably less than in the full-grown birds. Some characteristic points of difference—for instance, that of the width of mouth—could hardly be detected in the young. But there was one remarkable exception to this rule, for the young of the short-faced tumbler differed from the young of the wild rock-pigeon and of the other breeds, in all its proportions, almost exactly as much as in the adult state."—P. 445.

These are the most important original observations, recorded in the volume of 1859: they are, in our estimation, its real gems,—few indeed and far apart, and leaving the determination of the origin of species very nearly where the author found it; but a rich mine of such researches is alluded to and promised by Mr. Darwin, in a more voluminous collection of his researches, extending over a period of eighteen years; and to these every naturalist now looks forward with keen interest.

The interdependencies of living beings of different kinds and grades, and the injurious results of their interruption, have long attracted the attention of observant and philosophic naturalists. An undue importance indeed was at one time attached to this principle; it was deemed to be so absolute as that no one species could be permitted to perish without endangering the whole fabric of organization. So Pope sang:—

"From Nature's chain, whatever link you strike,  
Tenth or ten thousandth, breaks the chain alike."

Manifold subsequent experience has led to a truer appreciation and a more moderate estimate of the importance of the dependence of one living being upon another. Mr. Darwin contributes some striking and ingenious instances of the way in which the principle partially affects the chain, or rather net-work of life, even to the total obliteration of certain meshes. And truly, extinction has made wide rents in the reticulation as now represented by the co-affinities of living species!

"From experiments which I have tried, I have found that the visits of bees, if not indispensable, are at least highly beneficial to the fertilization of our clovers; but humble-bees alone visit the common red-clover (*Trifolium Pratense*), as other bees cannot reach the nectar. Hence I have very little doubt, that if the whole genus of humble-bees became extinct or very rare in England, the heartsease and red clover would become very rare, or wholly disappear. The number of humble-bees in any district depends in a great degree on the number of field-mice, which destroy their combs and nests; and Mr. H. Newman, who has long attended to the habits of humble-bees, believes 'that more than two-thirds of them are thus destroyed all over England.' Now the number of mice is largely dependent, as every one knows, on the number of cats; and Mr. Newman says, 'Near villages

and small towns I have found the nests of humble-bees more numerous than elsewhere, which I attribute to the number of cats that destroy the mice.' Hence it is quite credible that the presence of a feline animal in large numbers in a district might determine, through the intervention first of mice and then of bees, the frequency of certain flowers in that district!"—P. 73.

This is very characteristic of the ingenious turn of thought of our author; the more sober, or perhaps duller, naturalist would, no doubt, appreciate more highly a dry statement of investigations, suggested by the actual extinction of red clover, and tracing that extinction inductively, by the ascertained absence of humble-bees and mice, back to the want of cats in the neighborhood. For the direct observation, however (if it should be confirmed), of the exclusive relation of *Bombus terrestris*, as the mechanical fecundator of *Trifolium pratense*, natural history may be indebted to Mr. Darwin. We wish we could cite other instances augmenting this debt from the present work; its chief part, however, is devoted to speculations on the origin of species; and its main object is the advocacy of a view which we find most clearly expressed in the following passage. Mr. Darwin refers to the multitude of the individuals of every species, which, from one cause or another, perish either before, or soon after attaining maturity.

"Owing to this struggle for life, any variation, however slight and from whatever cause proceeding, if it be in any degree profitable to an individual of any species, in its infinitely complex relations to other organic beings and to external nature, will tend to the preservation of that individual, and will generally be inherited by its offspring. The offspring, also, will thus have a better chance of surviving, for, of the many individuals of any species which are periodically born, but a small number can survive. I have called this principle, by which each slight variation, if useful, is preserved, by the term of Natural Selection, in order to mark its relation to man's power of selection. We have seen that man by selection can certainly produce great results, and can adapt organic beings to his own uses, through the accumulation of slight but useful variations, given to him by the hand of Nature. But Natural Selection, as we shall hereafter see, is a power incessantly ready for action, and is as immeasurably superior to man's feeble efforts, as the works of Nature are to those of Art."—P. 61.

The scientific world has looked forward with great interest to the facts which Mr. Darwin might finally deem adequate to the support of his theory on this supreme question in biology, and to the course of inductive original research which might issue in throwing light on "that mystery of mysteries." But having now cited the chief, if

not the whole, of the original observations adduced by its author in the volume now before us, our disappointment may be conceived. Failing the adequacy of such observations, not merely to carry conviction, but to give a color to the hypothesis, we were then left to confide in the superior grasp of mind, strength of intellect, clearness and precision of thought and expression, which might raise one man so far above his contemporaries, as to enable him to discern in the common stock of facts, of coincidences, correlations and analogies in Natural History, deeper and truer conclusions than his fellow-laborers had been able to reach.

These expectations, we must confess, received a check on perusing the first sentence in the book.

"When on board H.M.S. 'Beagle,' as naturalist, I was much struck with certain facts in the distribution of the inhabitants of South America, and in the geological relations of the present to the past inhabitants of that continent. These facts seemed to me to throw some light on the origin of species—that mystery of mysteries, as it has been called by some of our greatest philosophers."—P. 1.

What is there, we asked ourselves, as we closed the volume to ponder on this paragraph,—what can there possibly be in the inhabitants, we suppose he means aboriginal inhabitants of South America, or in their distribution on that continent, to have suggested to any mind that man might be a transmuted ape, or to throw any light on the origin of the human or other species? Mr. Darwin must be aware of what is commonly understood by an "uninhabited island;" he may, however, mean by the inhabitants of South America, not the human kind only, whether aboriginal or otherwise, but all the lower animals. Yet again, why are the freshwater polypes or sponges to be called "inhabitants" more than the plants? Perhaps what was meant might be, that the distribution and geological relations of the organized beings generally in South America, had suggested transmutational views. They have commonly suggested ideas as to the independent origin of such localized kinds of plants and animals. But what the "certain facts" were, and what may be the nature of the light which they threw upon the mysterious beginning of species, is not mentioned or further alluded to in the present work.

The origin of species is the question of questions in zoology; the supreme problem which the most untiring of our original laborers, the clearest zoological thinkers, and the most successful generalizers, have never lost sight of, whilst they have approached it with due reverence. We have a right to expect that the mind proposing to treat of, and

assuming to have solved, the problem, should show its equality to the task. The signs of such intellectual power we look for in clearness of expression, and in the absence of all ambiguous or unmeaning terms. Now, the present work is occupied by arguments, beliefs, and speculations on the origin of species, in which, as it seems to us, the fundamental mistake is committed, of confounding the questions, of species being the result of a secondary cause or law, and of the nature of that creative law. Various have been the ideas promulgated respecting its mode of operation; such as the reciprocal action of an impulse from within, and an influence from without, upon the organization (Demaillet, Lamarck); premature birth of an embryo at a phase of development, so distinct from that of the parent, as, with the power of life and growth, under that abortive phase, to manifest differences equivalent to specific (*Vestiges of Creation*); the hereditary transmission of what are called "accidental monstrosities;" the principle of gradual transmutation by "degeneration" (Buffon) as contrasted with the "progressional" view.

In reference to the definition of species, Lamarck,\* in 1809, cited, as the most exact, that of "a collection of like (semblables) individuals produced by other individuals equally like them (pareils à eux)." But the progress of discovery, especially, perhaps, in palæontology, led him to affirm that species were not as ancient as nature herself, nor all of the same antiquity; that this alleged constancy was relative to the circumstances and influences to which every individual was subject, and that as certain individuals, subjected to certain influences, varied so as to constitute races, such variations might and do graduate (*s'avancent*) towards the assumption of characters which the naturalist would arbitrarily regard, some as varieties, others as species. He comments in almost the words of Mr. Darwin, on the embarrassment and confusion which the different interpretation of the nature and value of such observed differences, in the works of different naturalists, had occasioned.† The true method of surveying the diversities of organization is from the simple to the compound forms, which course Lamarck affirms to be graduated and regularly progressive, save where local circumstances, and others influencing the mode of life, have occasioned anomalous diversities.

Cuvier had preceded Lamarck in specifying the kinds and degrees of variation, which his own observations and critical judgment of the reports of others led him to admit.

\* Philosophie Zoologique, 8vo. 1809, vol. i. p. 54.  
† lb. p. 65.

"Although organisms produce only bodies similar to themselves, there are circumstances which, in the succession of generations, alter to a certain point their primitive form." Here it may be remarked, that the whole question at issue hinges upon the proof of the determination of that limit of variety. Cuvier gives no proof that the alteration stops "at a certain point." It merely appears from what follows, that his means of knowing by his own and others' observations had not carried him beyond the point in question, and he was not the man to draw conclusions beyond his premises.

"Less abundant food," he goes on to say, "makes the young acquire less size and force. Climate more or less cold, air more or less moist, exposure to light more or less continuous, produce analogous effects; but, above all, the pains bestowed by man on the animal and vegetable productions which he raises for his uses, the consecutive attention with which he restricts them in regard to exercise, or to certain kinds of food, or to influences other than those to which they would be subject in a state of nature, all tend to alter more quickly and sensibly their properties."

Cuvier admits that the determination by experiment of these variable properties, of the precise causes to which they are due, of the degree of variability and of the powers of the modifying influences, is still very imperfect ("mais ce travail est encore très-imparfait.") The most variable properties in organisms are, according to Cuvier, *size and color*.

"The first mainly depends on abundance of food; the second on light and many other causes so obscure that it seems to vary by chance. The length and strength of the hairs are very variable. A villous plant, for example, transported to a moist place, becomes smooth. Beasts lose hair in hot countries, but gain hair in cold. Certain external parts, such as stamens, thorns, digits, teeth, spines, are subject to variations of number both in the more and the less; parts of minor importance, such as barbs of wheat, etc., vary as to their proportions; homologous parts ('des parties de nature analogue') change one into another, i.e., stamens into petals as in double flowers, wings into fins, feet into jaws, and we might add, adhesive into breathing organs [as in the case of the barnacles cited by Mr. Darwin]."

As to the alleged test of the difference between a species and a variety by the infecundity of the hybrid of two parents which may differ in a doubtful degree, Cuvier, in reference to this being the case when the parents are of distinct species, and not mere varieties, emphatically affirms, "Cette assertion ne repose sur aucune preuve" (p. 11); it is a:

\* Cuvier, "Tableau Élémentaire de l'Histoire Naturelle," 8vo. 1798, p. 9.



least constant that individuals of the same species, however different, produce together; "quelque différens qu'ils soient, peuvent toujours produire ensemble." But Cuvier warns us not to conclude, when individuals of two different races produce an intermediate and fecund offspring, that they must be of the same species, and that they have not been originally distinct.—P. 13.

"The number of varieties, or amount of variation," says Cuvier, 'relates to geographical circumstances.' At the present day, many such varieties appear to have been confined around their primitive centre, either by seas which they could neither traverse by swimming or by flight, or by temperatures which they were not able to support, or by mountains which they could not cross, etc.\*

Daily observation, comparison, and reflection, on recent and extinct organisms, pursued from the date of these remarks (1798) to the close of his career (1832) failed to bring the requisite proof, or to impress the mind of Cuvier with any amount, of belief worth mentioning, as to the nature of the cause operative in the production of the species of which he was the first to demonstrate the succession.

Lamarck, without contributing additional results from observation and experience, affirms that the changes defined by Cuvier do not "stop at a certain point," but progress with the continued operation of the causes producing them. That, moreover, such changes of form and structure induce corresponding changes in actions, and that a change of actions, growing to a habit, becomes another cause of altered structure; that the more frequent employment of certain parts or organs leads to a proportional increase of development of such parts; and that, as the increased exercise of one part is usually accompanied by a corresponding disuse of another part, this very disuse, by inducing a proportional degree of atrophy, becomes another element in the progressive mutation of organic forms.†

These principles seem entitled to be regarded as of the nature of those called "veræ causæ" by Bacon, and they are agreeable with known powers and properties of animated beings; only observation has not disclosed more than a very limited ex-

tent of their operation,—limited both as to the time in which that operation has been watched, and limited consequently as to the amount of the change produced.

When Cuvier affirms that such capacity to vary proceeds only to a certain point, he may mean that it has not been watched and traced beyond such point. Cuvier admits the tendency to hereditary transmission of characters of variation. Neither he nor any other physiologist has demonstrated the organic condition or principle that should operate so as absolutely to prevent the progress of modification of form and structure correlatively with the operation of modifying influences, in successive generations. But those who hastily or prematurely assume an indefinite capacity to deviate from a specific form are as likely to obstruct as to promote the solution of the question.

The principles, based on rigorous and extensive observation, which have been established since the time of Cuvier, and have tended to impress upon the minds of the most exact reasoners in biology the conviction of a constantly operating secondary creational law, are the following:—The law of irrelative or vegetative repetition, referred to at p. 437, of Mr. Darwin's work; the law of unity of plan or relations to an archetype; the analogies of transitory embryonal stages in a higher animal to the matured forms of lower animals: the phenomena of parthenogenesis; a certain parallelism in the laws governing the succession of forms throughout time and space; the progressive departure from type, or from the more generalized or more specialized structures, exemplified in the series of species from their first introduction to the existing forms.\* In his last published work † Professor Owen does not hesitate to state "that perhaps the most important and significant result of palæontological research has been the establishment of the axiom of the *continuous operation of the ordained becoming of living things*." The italics are the author's. As to his own opinions regarding the nature or mode of that "continuous creative operation," the Professor is silent. He gives a brief summary of the hypotheses of others, and as, briefly touches upon the defects in their inductive bases.‡ Elsewhere he has restricted himself to testing the idea of progressive

\* "Les variétés de chacune ont dû être d'autant plus fortes et plus nombreuses, que les circonstances des lieux ou de sa nature lui ont permis de s'étendre plus loin; c'est ce qui peut faire croire que les grandes différences que se trouvent parmi les hommes, les chiens, et les autres êtres répandues partout le monde, ne sont que des effets des causes accidentelles, en un mot, des *variétés*."—P. 14.

† Philosophie Zoologique, 8vo, 1809, tom. i. chaps. iii. vii.

\* The most numerous illustrations of this principle are to be found in Owen's palæontological works and memoirs; but he refrains from announcing it as a general law, probably regarding the induction as being yet incomplete.

† Palæontology, or a Systematic Summary of Extinct Animals, and their Geological Relations, 8vo., 1860, p. 3.; and President's Address to the British Association at Leeds, 1858, p. 3.

‡ Palæontology, p. 404.



transmutation by such subjects of natural history as he might have specially in hand; as, e.g. the characters of the chimpanzee, gorilla, and some other animals.

All who have brought the transmutative speculations to the test of observed facts and ascertained powers in organic life, and have published the results, usually adverse to such speculations, are set down by Mr. Darwin as "curiously illustrating the blindness of preconceived opinion;" and whosoever may withhold assent to his own or other transmutationists' views, is described as "really believing that at innumerable periods of the earth's history certain elemental atoms suddenly flashed into living tissues." (P. 483.) Which, by the way, is but another notion of the mode of becoming of a species as little in harmony with observation as the hypothesis of natural selection by external influence, or of exceptional birth or development. Nay, Mr. D. goes so far as to affirm—

"All the most eminent palæontologists, namely, Cuvier, Owen, Agassiz, Barrande, Falconer, E. Forbes, etc., and all our greatest geologists, as Lyell, Murchison, Sedgwick, etc., have unanimously, often vehemently, maintained the immutability of species."—P. 310.

But if by this is meant that they as unanimously reject the evidences of a constantly operative secondary cause or law in the production of the succession of specifically differing organisms, made known by Palæontology, it betrays not only the confusion of ideas as to the fact and the nature of the law, but an ignorance or indifference to the matured thoughts and expressions of some of those eminent authorities on this supreme question in Biology.

One of the disciples would seem to be as short-sighted as the master in regard to this distinction.

"It has been urged," writes Dr. Hooker, "against the theory that existing species have arisen through the variation of pre-existing ones and the destruction of intermediate varieties, that it is a hasty inference from a few facts in the life of a few variable plants, and is therefore unworthy of confidence; but it appears to me that the opposite theory, which demands an independent creative act for each species, is an equally hasty inference."—*Hooker*, p. xxv.

Here it is assumed, as by Mr. Darwin, that no other mode of operation of a secondary law in the foundation of a form with distinct specific characters, can have been adopted by the Author of all creative laws than the one which the transmutationists have imagined. Any physiologist who may find the Lamarckian, or the more diffused and attenuated Darwinian, exposition of the law inapplicable to a species, such as the gorilla, considered as a step in the trans-

mutative production of man, is forthwith clamored against as one who swallows up every fact and every phenomenon regarding the origin and continuance of species "in the gigantic conception of a power intermittently exercised in the development, out of inorganic elements, of organisms the most bulky and complex, as well as the most minute and simple." Significantly characteristic of the partial view of organic phenomena taken by the transmutationists, and of their inadequacy to grapple with the working out and discovery of a great natural law, is their incompetency to discern the indications of any other origin of one specific form out of another preceding it, save by their way of gradual change through a series of varieties assumed to have become extinct.

But has the free-swimming medusa, which bursts its way out of the ovi-capsule of a campanularia, been developed out of inorganic particles? Or have certain elemental atoms suddenly flashed up into acalcephal form? Has the polype-parent of the acalcephæ necessarily become extinct by virtue of such anomalous birth? May it not, and does it not proceed to propagate its own lower species in regard to form and organization, notwithstanding its occasional production of another very different and higher kind. Is the fact of one animal giving birth to another not merely specifically, but generically and ordinarily, distinct, a solitary one? Has not Cuvier, in a score or more of instances, placed the parent in one class, and the fruitful offspring in another class, of animals? Are the entire series of parthenogenetic phenomena to be of no account in the consideration of the supreme problem of the introduction of fresh specific forms into this planet? Are the transmutationists to monopolize the privilege of conceiving the possibility of the occurrence of unknown phenomena, to be the exclusive propounders of beliefs and surmises, to cry down every kindred barren speculation, and to allow no indulgence in any mere hypothesis save their own? Is it to be endured that every observer who points out a case to which transmutation, under whatever term disguised, is inapplicable, is to be set down by the refuted theorist as a believer in a mode of manufacturing a species which he never did believe in, and which may be inconceivable?

We would ask Mr. Darwin and Dr. Hooker to give some thought to these queries, and if they should see the smallest meaning in them, to reconsider their future awards of the alternative which they may be pleased to grant to a fellow-laborer, hesitating to accept the proposition, either that life commenced under other than actually operating laws, or that "all the beings that ever lived

on this earth have descended," by the way of "natural selection," from a hypothetical unique instance of a miraculously created primordial form.

We are aware that Professor Owen and others, who have more especially studied the recently discovered astounding phenomena of generation summed up under the terms parthenogenesis and alternation of generations, have pronounced against those phenomena having, as yet, helped us "to penetrate the mystery of the origin of different species of animals," and have affirmed, at least so far as observation has yet extended, that "the cycle of changes is definitely closed;" that is, that when the ciliated "monad" has given birth to the "gregarina," and this to the "cercaria," and the "cercaria" to the "distoma,"—that the fertilized egg of the fluke-worm again excludes the progeny under the infusorial or monadic form, and the cycle again recommences.\* But circumstances are conceivable,—changes of surrounding influences, the operation of some intermittent law at long intervals, like that of the calculating-machine quoted by the author of "Vestiges,"—under which the monad might go on splitting up into monads, the gregarina might go on breeding gregarinae, the cercaria cercariae, etc., and thus four or five not merely different specific, but different generic, and ordinal forms, zoologically viewed, might all diverge from an antecedent quite distinct form. For how many years, and by how many generations, did the captive polype-progeny of the *Medusa aurita* go on breeding polypes of their species (*Hydra tuba*), without resolving themselves into any higher form, in Sir John Dalyell's aquarium?† The natural phenomena already possessed by science are far from being exhausted, on which hypotheses, other than transmutative, of the production of species by law might be based, and on a foundation at least as broad as that which Mr. Darwin has exposed in this essay.

We do not advocate any of these hypotheses in preference to the one of "natural selection," we merely affirm that this at present rests on as purely a conjectural basis. The exceptions to that and earlier forms of transmutationism which rise up in the mind of the working naturalist and original observer, are so many and so strong as to have left the promulgation and advocacy of the hypothesis, under any modification, at all times to individuals of more imaginative temperament; such as Demaillet in the last

century, Lamarck in the first half of the present, Darwin in the second half. The great names to which the steady inductive advance of zoology has been due during those periods, have kept aloof from any hypothesis on the origin of species. One only, in connection with his palæontological discoveries, with his development of the law of irrelative repetition and of homologies, including the relation of the latter to an archetype, has pronounced in favor of the view of the origin of species by a continuously operative creational law; but he, at the same time, has set forth some of the strongest objections or exceptions to the hypothesis of the nature of that law as a progressively and gradually transmutational one.

Mr. Darwin rarely refers to the writings of his predecessors, from whom, rather than from the phenomena of the distribution of the inhabitants of South America, he might be supposed to have derived his ideas as to the origin of species. When he does allude to them, their expositions on the subject are inadequately represented. Every one studying the pages of Lamarck's original chapters (iii. vi. vii., vol. i., and the supplemental chapter of "additions" to vol. ii. of the "Philosophie Zoologique"), will see how much weight he gives to inherent constitutional adaptability, to hereditary influences, and to the operation of long lapses of time on successive generations, in the course of transmuting a species. The common notion of Lamarck's philosophy, drawn from the tirades which a too figurative style of illustrating the reciprocal influence of innate tendencies and outward influences have drawn upon the blind philosopher, is incorrect and unjust. Darwin writes:—

"Naturalists continually refer to external conditions, such as climate, food, etc., as the only possible cause of variation. In one very limited sense, as we shall hereafter see, this may be true; but it is preposterous to attribute to mere external conditions, the structure, for instance, of the woodpecker, with its feet, tail, beak, and tongue, so admirably adapted to catch insects under the bark of trees. In the case of the misseltoe, which draws its nourishment from certain trees, which has seeds that must be transported by certain birds, and which has flowers with separate sexes absolutely requiring the agency of certain insects to bring pollen from one flower to the other; it is equally preposterous to account for the structure of this parasite, with its relations to several distinct organic beings, by the effects of external conditions, or of habit, or of the violation of the plant itself.

"The author of the 'Vestiges of Creation' would, I presume, say that, after a certain unknown number of generations, some bird had given birth to a woodpecker, and some plant to the misseltoe, and that these had been pro-

\* President's Address to the British Association at Leeds, p. 27.

† See the beautiful work entitled, "Rare and Remarkable Animals of Scotland," 4to. vol. i. 1847, by Sir J. G. Dalyell.

duced perfect as we now see them; but this assumption seems to me to be no explanation, for it leaves the case of the co-adaptations of organic beings to each other and to their physical conditions of life untouched and unexplained."—P. 3.

The last cited ingenious writer came to the task of attempting to unravel the "mystery of mysteries," when a grand series of embryological researches had brought to light the extreme phases of form that the higher animals passed through in the course of fetal development, and the striking analogies which transitory embryonal phases of a higher species presented to series of lower species in their permanent or completely developed state. He also instances the abrupt departure from the specific type manifested by a malformed or monstrous offspring, and called to mind the cases in which such malformations had lived and propagated the deviating structure. The author of "Vestiges," therefore, speculates—and we think not more rashly or unlawfully than his critic has done—on other possibilities, other conditions of change, than the Lamarckian ones; as, for example, on the influence of premature birth and of prolonged fetation in establishing the beginning of a specific form different from that of the parent. And does not the known history of certain varieties, such as that of M. Graux's cachemir-wooled sheep, which began suddenly by malformation, show the feasibility of this view? \*

"The whole train of animated beings," writes the author of "Vestiges of Creation," "are the results *first*, of an inherent impulse in the forms of life to advance, in definite times, through grades of organization terminating in the highest dicotyledons and mammals; *second*, of external physical circumstances, operating re-actively upon the central impulse to produce the requisite peculiarities of exterior organization,—the adaptation of the natural theologian." But he, likewise, requires the same additional element which Mr. Darwin so freely invokes. "The gestation of a single organism is the work of but a few days, weeks, or months; but the gestation (so to speak) of a whole creation is a matter involving enormous spaces of time." . . . "Though distinctions admitted as specific are not now, to ordinary observation, superable, time may have a power over these." . . . "Geology shows successions of forms and grants enormous spaces of time within which we may believe them to have changed from each other by the means which we see producing varieties. Brief spaces of time admittedly sufficing to produce these so-called varieties, is it unreasonable to suppose that large spaces of time

\* Reports of the Juries Exhibition of the Works of All Nations, 8vo., 1852, p. 70.

would effect mutations somewhat more decided, but of the same character? "

Unquestionably not, replies Mr. Darwin:—

"To give an imaginary example from changes in progress on an island: let the organization of a canine animal which preyed chiefly on rabbits, but sometimes on hares, become slightly plastic; let these same changes cause the number of rabbits very slowly to decrease, and the number of hares to increase; the effect of this would be that the fox or dog would be driven to try to catch more hares; his organization, however, being slightly plastic, those individuals with the lightest forms, longest limbs, and best eyesight, let the difference be ever so small, would be slightly favored, and would tend to live longer, and to survive during that time of the year when food was scarcest; they would also rear more young, which would tend to inherit those slight peculiarities. The less fleet ones would be rigidly destroyed. I can see no more reason to doubt that these causes in a thousand generations would produce a marked effect, and adapt the form of the fox or dog to the catching of hares instead of rabbits, than that greyhounds can be improved by selection and careful breeding." †

Of course, prosaic minds are apt to bore one by asking for our proofs, and one feels almost provoked, when seduced to the brink of such a draught of forbidden knowledge as the transmutationists offer, to have the Circean cup dashed away by the dry remark of a president of the British Association:—

"Observation of animals in a state of nature is required to show their degree of plasticity, or the extent to which varieties do arise: whereby grounds may be had for judging of the probability of the elastic ligaments and joint-structures of a feline foot, for example, being superinduced upon the more simple structure of the toe with the non-retractile claw, according to the principle of a succession of varieties in time." ‡

This very writer has, however, himself suggested an operative cause in the development of organized beings of a different and opposite character to that conceived by "Vestiges," to produce the teleological adaptations. Professor Owen has pointed out the numerous instances in the animal kingdom of a principle of structure prevalent throughout the vegetable kingdom, exemplified by the multiplication of organs in one animal performing the same function, and not related to each other by combination of powers for the performance of a higher function. The invertebrate animals, according to the professor, afford the most numerous and striking illustrations of the principles

\* Vestiges of Creation, 8vo., 1846, p. 231.

† "On the Tendency of Species to form Varieties," etc., in "Proceedings of the Linnean Society," 1858, p. 49.

‡ Address, p. 44.

which he has generalized as the "Law of Irrelative Repetition."

"We perceive," says he, "in the fact of the endoskeleton consisting of a succession of segments similarly composed—in the very power of enunciating special, general, and serial homologies—an illustration of that law of vegetative or irrelative repetition, which is so much more conspicuously manifested by the segments of the exoskeleton of the invertebrata: as, for example, in the rings of the centipede and worm, and in the more multiplied parts of the skeleton of the Echinoderms. The repetition of similar segments in the spinal column, and of similar elements in a vertebral segment, is analogous to the repetition of similar crystals, as the result of the polarizing force in the growth of an inorganic body. Not only does the principle of vegetative repetition prevail more and more as we descend in the scale of animal life, but the forms of the repeated parts of the skeleton approach more and more to geometrical figures; as we see, for example, in the external skeletons of the echini and star-fishes; nay, the calcifying salt assumes the same crystalline figures which characterize it, when deposited and subject to the general polarizing force out of the organized body. Here, therefore, we have direct proof of the concurrence of such general all-pervading polarizing force, with the adaptive or special organizing force, in the development of an animal body."

In addition, therefore, to the organizing principle, however explained, producing the special "adaptations," and admitted as the "second" power in the production of species by "Vestiges," Professor Owen states—

"There appears also to be in counter-operation during the building up of such bodies, a general polarizing force, to the operation of which the similarity of forms, the repetition of parts, the signs of the unity of organization may be mainly ascribed; the platonic *lôea* or specific organizing principle would seem," he adds, "to be in antagonism with the general polarizing force, and to subdue and mould it in subserviency to the exigencies of the resulting specific form."\*

An index of the degree in which the polaric or irrelative repetitive force has operated is given by that character of the animal's organization which is expressed by the term of "a more generalized structure." V. Baer pointed out that the structure was "more generalized," in the ratio of the proximity of the individual to the starting point of its existence. In proportion as the individual is subject to the action and re-action of surrounding influences, in other words, as it advances in life, does it acquire a more specialized structure—more decided specific and individual characters.† Owen has shown

\* Archetype of the Vertebrate Skeleton, 8vo, 1840, p. 171.

† "The extent to which the resemblance, expressed by the term 'Unity of Organization,' may

that the more generalized structure is in a very significant degree, a characteristic of many extinct as compared with recent animals; and it may be readily conceived that specialization of structure would be the result of the progressive modification of any organ applied to a special purpose in the animal economy.

We have cited these attempts to elucidate the nature of the organizing forces, to show the prevalent condition of the most advanced physiological minds in regard to the cause of the successive introduction of distinct species of plants and animals. Demaillet invoked the operation of the external influences or conditions of life, with consensaneous volitional efforts, in order to raise species in the scale, as the fish, e. g., into the bird.\* Buffon called in the same agency to lower the species, by way of degeneration, as the bear, e. g., into the seal, and this into the whale.† Lamarck added to these outward influences the effects of increased or decreased use or action of parts. The Author of "Vestiges," availing himself of the ingenious illustration of a pre-ordained exception, occurring at remote intervals, to the ordinary course, derived by Babbage from the working of his calculating engine, threw out the suggestion of a like rare exception in the character of the offspring of a known species, and he cites the results of embryological studies, to show how such "monster" either by excess or defect, by arrest or prolongation of development, might be no monster in fact, but one of the pre-ordained exceptions in the long series of natural operations, giving rise to the introduction of a new species. Owen applies the more recent discoveries of Parthenogenesis to the same mysterious problem. A polype, e. g., breaks up into a pile of medusæ; "the indirect or direct action of the conditions of life" might tend to harden the integument and change the medusa into a star-fish. But he resists the seduction of possibilities, and governed by the extent of actual observation, says:—"The first acquaintance with these marvels excited the hope that we were about to penetrate the mystery of the origin of species; but as far as observation has yet extended, the cycle of changes is definitely closed."‡

Mr. Wallace calls attention to the "trace traced between the higher and lower organized animals, bears an inverse ratio to their approximation to maturity." (Owen, *Lectures on Invertebrata*, p. 645.)

\* Tellamed, ou Entretiens d'un Philosophe Indien avec un Missionnaire François, Amsterdam, 8vo, 1748.

† Histoire Naturelle, etc., 4to, tom. xiv. 1766.

‡ Address to the British Association at Leeds, 1858, p. 27.



mendous rate of increase in a few years from a single pair of birds producing two young ones each year, and this only four times in their life; in fifteen years such pair would have increased to nearly ten millions!"\* The passenger-pigeon of the United States exemplifies such rate of increase, where congenial food abounds. But, as a general rule, the animal population of a country is stationary, being kept down by a periodical deficiency of food, and other checks. Hence the struggle for existence; and the successful result of adapted organization and powers in a well-developed variety, which Mr. Darwin generalizes as "Natural Selection," and which Mr. Wallace † illustrates as follows:—

"An antelope with shorter or weaker legs must necessarily suffer more from the attacks of the feline carnivora; the passenger-pigeon with less powerful wings, would sooner or later be affected in its powers of procuring a regular supply of food."‡ If, on the other hand, "any species should produce a variety having slightly increased powers of preserving existence, that variety must inevitably in time acquire a superiority in numbers." "During any change tending to render existence more difficult to a species, tasking its utmost powers to avoid complete extermination, those individuals forming the most feebly organized variety would suffer first; the same causes continuing the parent species would next suffer, would gradually diminish in numbers, and with a recurrence of similar unfavorable conditions, must soon become extinct. The superior variety would then alone remain, and on a return to favorable circumstances would rapidly increase in numbers and occupy the place of the extinct species and variety. The variety would now have replaced the species of which it would be a more perfectly developed and a more highly organized form."§

Buffon regarded varieties as particular alterations of species, as supporting and illustrating a most important principle—the mutability of species themselves. The so-called varieties of a species, species of a genus, genera of a family, etc., were, with him, so many evidences of the progressive amount or degrees of change which had been superinduced by time and generations upon a primordial type of animal. Applying this principle to the two hundred mammalian species of which he had given a history in his great work, he believed himself able to reduce them to a very small number of primitive stocks or families.¶ Of these he enumerates fifteen: besides which, Buffon specifies certain isolated forms, which represent, as he

forcibly and truly expresses it, both species and genus; \* such are the elephant, rhinoceros, hippopotamus, giraffe, camel, lion, bear, and mole.† Paleontology has since revealed the evidences of the true nature and causes of the present seeming isolation of some of these forms.

Such evidences have been mainly operative with the later adopters and diffusers of Buffon's principle in the reduction of the number of primitive sources of existing species, and the contraction of the sphere of direct creative acts. Thus Lamarck ‡ reduces the primordial forms or prototypes of animals to two, viz. the worm (*vers*), and the monad (*infusoires*); the principles which in the course of illimitable time operated, on his hypothesis, to produce the present groups of animals led from the vibrio, through the annelids, cirripeds, and molluscs to fishes, and there met the other developmental route by way of rotifers, polypes, radiaries, insects, arachnides, and crustacea. The class of fishes, deriving its several forms from combinations of transmuted squids and crabs, then proceeded through the well-defined vertebrate pattern up to man. With a philosophic consistency, wanting in his latest follower, Lamarck sums up: "Cette série d'animaux commençant par deux branches où se trouvent les plus imparfaits, les premiers de chacune de ces branches ne reçoivent l'existence que par génération directe ou spontanée."§

Mr. Darwin, availing himself of the more exact ideas of the affinities and relationships of animal groups obtained by subsequent induction, says: "I believe that animals have descended from at most only four or five progenitors," [evidently meaning, or answering to, the type forms of the four or five "sub-kingdoms" in modern zoölogy], "and plants from an equal or lesser number."

But if the means which produce varieties have operated "through the enormous species of time, within which species are changed,"|| the minor modifications which produce, under our brief scope of observation, so-called varieties, might well amount to differences equivalent to those now separating sub-kingdoms; and, accordingly, "analogy," Mr. Darwin logically admits, "would lead us one step further, namely, to the belief that all animals and plants have descended from some one prototype;"¶ and summing up the conditions which all living things have

\* "Quelques espèces isolées, qui, comme celle de l'homme, fassent en même temps espèce et genre."—Tom. cit. p. 335.

† *Ib.*, p. 360.

‡ Philosophie Zoologique, vol. ii. p. 463.

§ *Ib.*, p. 463.

|| Vestiges of Creation, p. 231.

¶ *Op. cit.*, p. 484.

\* Proceedings of the Linnean Society, 1858, p. 55.

† Proceedings of the Linnean Society (dated from "Ternate," February, 1858), vol. iii. p. 58.

‡ Wallace, loc. cit. p. 85.

§ *Ib.*, p. 58.

¶ Histoire Naturelle, tom. xiv. p. 338.



in common, this writer infers from that analogy, that probably all the organic beings which have ever lived on this earth, have descended from some one primordial form, into which life was first breathed.\*

By the latter scriptural phrase, it may be inferred that Mr. Darwin formally recognizes, in the so-limited beginning, a direct creative act, something like that supernatural or miraculous one which, in the preceding page, he defines, as "certain elemental atoms which have been commanded suddenly to flash into living tissues." He has, doubtless, framed in his imagination some idea of the common organic prototype; but he refrains from submitting it to criticism. He leaves us to imagine our globe void, but so advanced as to be under the conditions which render life possible; and he then restricts the Divine power of breathing life into organic form to its minimum of direct operation. All subsequent organisms henceforward result from properties imparted to the organic elements at the moment of their creation, pre-adapting them to the infinity of complications and their morphological results, which now try to the utmost the naturalist's faculties to comprehend and classify. And we admit with Buckland, that such an aboriginal constitution, "far from superseding an intelligent agent, would only exalt our conceptions of the consummate skill and power, that could comprehend such an infinity of future uses, under future systems, in the original groundwork of his creation."

We would accordingly assure Professor Owen that he "may conceive the existence of such ministers, personified as nature without derogation of the Divine power;" and that he, with other inductive naturalists, may confidently advance in the investigation of those "natural laws or secondary causes, to which the orderly succession and progression of organic phenomena have been committed."† We have no sympathy whatever with biblical objectors to creation by law, or with the sacerdotal revilers of those who would explain such law. Literal scripturalism in the time of Lactantius, opposed and reviled the demonstrations of the shape of the earth; in the time of Galileo it reviled and persecuted the demonstrations of the movements of the earth; in the time of Dean Cockburn of York, it anathematized the demonstrations of the antiquity of the earth; and the eminent geologist who then personified the alleged anti-scriptural heresy, has been hardly less emphatic than his theological assailant, in his denunciations of some of the upholders of the "becoming and succession of species by natural law," or by

"a continuously operating creative force." What we have here to do, is to express our views of the hypothesis as to the nature and mode of operation of the creative law, which has been promulgated by Messrs. Wallace and Darwin.

The author of the volume "On the Origin of Species," starts from a single supernaturally created form. He does not define it; it may have been beyond his power of conception. It is, however, eminently plastic, is modified by the influence of external circumstances, and propagates such modifications by generation. Where such modified descendants find favorable conditions of existence, there they thrive; where otherwise they perish. In the first state of things, the result is so analogous to that which man brings about, in establishing a breed of domestic animals from a selected stock, that it suggested the phrase of "Natural Selection;" and we are appealed to, or at least "the young and rising naturalists with plastic minds," are adjured to believe that the reciprocal influences so defined have operated through divergence of character and extinction, on the descendants of a common parent, so as to produce all the organic beings that live, or have ever lived on our planet.

Now we may suppose that the primeval prototype began by producing in the legal generative way, creatures like itself, or so slightly affected by external influences, as at first to be scarcely distinguishable from their parent. When as the progeny multiplied and diverged, they came more and more under the influence of "Natural Selection," so, through countless ages of this law's operation, they finally rose to man. But, we may ask, could any of the prototype's descendants utterly escape the surrounding influences? To us such immunity, in the illimitable period during which the hypothesis of natural selection requires it to have operated, is inconceivable. No living being, therefore, can now manifest the mysterious primeval form to which Darwin restricts the direct creative act; and we may presume that this inevitable consequence of his hypothesis, became to him an insuperable bar to the definition of that form.

But do the facts of actual organic nature square with the Darwinian hypothesis? Are all the recognized organic forms of the present date so differentiated, so complex, so superior to conceivable primordial simplicity of form and structure, as to testify to the effects of natural selection continuously operating through untold time? Unquestionably not. The most numerous living beings now on the globe are precisely those which offer such a simplicity of form and

\* Op. cit., p. 484.

† On the Nature of Limbs, p. 86.

\* On the Nature of Limbs, p. 482.

structure, as best agrees, and we take leave to affirm can only agree, with that ideal prototype from which, by any hypothesis of natural law, the series of vegetable and animal life might have diverged.

If by the patient and honest study and comparison of plants and animals, under their manifold diversities of matured form, and under every step of development by which such form is attained, any idea may be gained of a hypothetical primitive organism,—if its nature is not to be left wholly to the unregulated fancies of dreamy speculation—we should say that the form and condition of life which are common, at one period of existence, to every known kind and grade of organism, would be the only conceivable form and condition of the one primordial being from which “Natural Selection” infers that all the organisms which have ever lived on this earth have descended.

Now the form in question is the nucleated cell, having the powers of receiving nutritive matter from without, of assimilating such nutriment, and of propagating its kind by spontaneous fission. These powers are called “vital,” because as long as they are continued the organism is said to live. The most numerous and most widely diffused of living beings present this primitive grade of structure and vital force, which grade is inferior to that of the truly definable “plant” or “animal,” but is a grade represented and passed through by the germ of every, even the highest, class of animals, in the course of embryonic development. The next stages of differentiated or advanced organization are defined as follows in Professor Owen’s last publication:—

“When the organism is rooted, has neither mouth nor stomach, exhales oxygen, and has tissues composed of ‘cellulose’ or of binary or ternary compounds, it is called a ‘plant.’ When the organism can move, when it receives the nutritive matter by a mouth, inhales oxygen, and exhales carbonic acid, and develops tissues, the proximate principles of which are quaternary compounds of carbon, hydrogen, oxygen, and nitrogen, it is called an ‘animal.’ But the two divisions of organisms called ‘plants’ and ‘animals’ are specialized members of the great natural groups of living things; and there are numerous organisms, mostly of minute size and retaining the form of nucleated cells, which manifest the common organic characters, but without the distinctive superadditions of true plants or animals. Such organisms are called ‘protozoa,’ and include the sponges or *Amorphozoa*, the *Foraminifera* or Rhizopods, the *Polycystineæ*, the *Diatomaceæ*, *Desmidiæ*, *Gregarinæ*, and most of the so-called *Polygastria* of Ehrenberg, or infusorial animalcules of older authors.”\*—

\* Owen’s *Palæontology*, p. 4.

All these would be interpreted as the earliest evidences of the modifying and species-changing influences, according to the hypothesis of Lamarck. They are the organisms respecting which the first living physiologists hesitate to apply the Harveian axiom *omne vivum ab ovo*, believing the possibility of their spontaneous origin to be by no means experimentally disproved. The prevalence of the essential first step in the production of all higher organisms, viz. through the combined matter of the “germ-cell” and “sperm-cell,” has no doubt strongly inclined physiologists to believe impregnation to be an absolute condition of the beginning of all existing organisms. But, as the president of the British Association stated, in his “Address” at Leeds:—

“In regard to lower living things, analogy is but hazardous ground for conclusions. The single-celled organisms, such as many of the so-called animalcules of infusions, which are at a stage of organization too low for a definite transfer to either the vegetable or animal kingdoms, offer a field of observation and experiment which may yet issue in giving us a clearer insight into the development of the organic living cell.”—“Whether an independent free-moving and assimilating organism, of a grade of structure similar to, and scarcely higher than, the ‘germ-cell,’ may not arise by a collocation of particles, through the operation of a force analogous to that which originally formed the germ-cell in the ovarian stroma, is a question which cannot be answered until every possible care and pains have been applied to its solution.”—P. 28.

Professor Pouchet believes that he is authorized by the results of his experiments to answer that question in the affirmative. It is one of supreme importance, and which has, hitherto, never received such an amount of painstaking experimental research as it merits; and the best observations, the most carefully conducted and ingeniously devised arrangements for insuring success, are undoubtedly those of the patiently observant professor of Zoölogy in the “Ecole de Médecine,” and “Ecole supérieure des Sciences,” at Rouen.\* This, at least, may be affirmed, that the inductive groundwork of his opponents is by no means such as can justify any dogmatic negation of Heterogeny as applicable to the simplest Protozoa.

On the basis, therefore, of analogical probability, it may be inferred:—that the primordial as well as all other forms of organic beings, originate, and have ever originated, from the operation of secondary and continuously operating creative laws: and that the various grades of organisms now in being,

\* Pouchet, “Hétérogénie, ou Traité de la Génération spontanée, basé sur des nouvelles Expériences,” 8vo., 1869.

from the microscopic monad upwards, indicate the various periods in time at which the first step of the series they respectively terminate began. The monad that by "natural selection" has ultimately become man, dates from the furthest point in the remote past, upon which our feigners of developmental hypotheses can draw with unlimited credit: the monad which by its superficial vibratile cilia darted across the field of the microscope we were looking through this morning, is the result of the collocation of particles which, without "sudden flash," took place under the operation of the heterogeneous organizing force of yesterday.

Accordingly we find that every grade of structure, from the lowest to the highest, from the most simple to the most complex, is now in being,—a result which it is impossible to reconcile with the Darwinian hypothesis of the one and once only created primordial form, the parent of all subsequent living things. The changes which our planet has undergone in the course of geological time have been accompanied by the loss of many minor links which connected together the existing evidences of gradational structure; but the general laws regulating the progress and diversity of organic forms, having been the same throughout all time, so it happens, according to the testimony of the most experienced palæontologists, that—

"Every known fossil belongs to some one or other of the existing classes, and that the organic remains of the most ancient fossiliferous strata do not indicate or suggest that any earlier and different group of beings remains to be discovered, or has been irretrievably lost in the universal metamorphism of the oldest rocks."\*

That forms, recognized as species by their distinctive characters and the power of propagating them, have ceased to exist, and have successively passed away, is a fact now unquestioned; that they have been exterminated by exceptional cataclysmal changes of the earth's surface, as was surmised at the first acceptance of the fact of extinction, has not been proved; that their limitation in time may, in some instances, or in some degree, be due to constitutional changes, accumulating by slow degrees in the long course of generations, is possible: but all the traceable and observed causes of extirpation point either to continuous slowly operating geological changes, or to no greater sudden cause than the apparition of mankind on a limited tract of land not before inhabited. It is now, therefore, generally inferred that the extinction of species, prior to man's existence, has been due to ordinary causes—ordinary in the sense of agreement with the great laws of never-ending mutation of geographical and

climatal conditions on the earth's surface. The individuals of species least adapted to bear such influences and incapable of modifying their organization in harmony therewith, have perished. Extinction, therefore, on this hypothesis, is due to the want of self-adjusting, self-modifying power in the individuals of the species.

In the joint paper on the tendency of varieties to form species by natural means of selection,\* one of the authors writes:—

"Any minute variation in structure, habits, or instincts, adapting the individual better to the new conditions, would tell upon its vigor and health. In the struggle it would have a better chance of surviving, and those of its offspring which inherited the variation would also have a better chance. Let this work go on for a thousand generations, and who will pretend to affirm," asks Mr. Darwin, "that a new species might not be the result?"

Thereupon is adduced the imaginary example of dogs and rabbits on an island, which we have already cited.

Now this, we take leave to say, is no very profound or recondite surmise; it is just one of those obvious possibilities that might float through the imagination of any speculative naturalist; only, the sober searcher after truth would prefer a blameless silence to sending the proposition forth as explanatory of the origin of species, without its inductive foundation.

In the degeneration-theory of Buffon, man is one of the primitive types,—the created apes and monkeys are derivatives. He might have illustrated it as follows:—

To give an imaginary example from changes in progress on an island: let the organization of a wild man feeding chiefly on fruits become slightly plastic; let corresponding changes cause the sources of food on the ground very slowly to decrease, and those on the trees to increase; the effect of this would be that the man would try to climb more for food. Suppose also that a tiger or like destructive carnivore should swim over and settle in the island, which happened to be destitute of flints for weapons. The human organization being slightly plastic, those individuals with the longest and strongest arms, and with the most prehensile use of the great toe, let the difference be ever so small, would be slightly favored, would survive during that time of the year when food was scarcest on the ground, but ripe and ready on certain trees; they would also rear more young which would tend to inherit these slight peculiarities. The best climbers would escape the tigers, the worst would be rigidly destroyed.

\* By Darwin and Wallace, "Proceedings of the Linnean Society," August, 1858, p. 45.

\* Owen's Palæontology, p. 18.

Buffon would have seen no more reason to doubt that these causes, in a thousand generations, would produce a marked effect, and adapt the form of the wild man to obtain fruits rather than grains, than Darwin now believes that man can be improved by selection and careful interbreeding into a higher, more heroic, more angelic form! The advocate of Buffon's hypothesis might point out that it is on islands, as Borneo and Sumatra, for example, where the orang-utan—the obvious result of such “degradation by natural selection”—is exclusively found. And is it not there also, and in some other islands of the Malayan Archipelago, where the next step in the scale of “degeneration” is exhibited in the still longer-armed Ungkas and other tail-less *Hyllobates*? And though we call them “tail-less” yet they have the “os coccygis,” and this being a terminal appendage of stunted vertebrae, offers the very condition for the manifestation of an occasional developmental variety. If cats, after accidental mutilation or malformation, can propagate a tail-less breed, why may not apes produce a tailed variety, and by natural selection in a long course of ages, degenerate into endless incipient species of “baboons and monkeys?”

But Mr. Darwin, it may be said, repudiates the coarse transmutational conditions and operations of Buffon and Lamarck; or, if there be any parallel between his and Buffon's illustration of the changing of species, at all events such parallels must run in opposite directions.

Mr. Darwin starts from a single created prototype, from which it is difficult to conceive he can mean any other course of organic progress than an ascensive one. But of this, in the absence of a definition of the starting point, we cannot be perfectly sure. “Natural selection” may operate in both directions. The following, for example, would have been cordially welcomed by Buffon as a testimony in favor of his “dégénération” hypothesis:—

“In North America the black bear was seen by Hearne swimming for hours with widely open mouth, thus catching, like a whale, insects in the water. Even in so extreme a case as this, if the supply of insects were constant, and if better adapted competitors did not already exist in the country, I can see no difficulty in a race of bears being rendered, by natural selection, more and more aquatic in their structure and habits, with larger and larger mouths, till a creature was produced as monstrous as a whale.”\*

If the ursine species had not been restricted to northern latitudes, we might have surmised this to have been one of the facts connected with “the distribution of the inhabitants of South America,” which seemed to

Mr. Darwin, when naturalist on board H.M.S. Beagle, “to throw some light on the origin of species.”\* But the close resemblance of the style, and of the tone and frame of mind which could see no difficulty in the adequacy of the above-cited circumstances of “external conditions, of habit, of volition,” to change a bear into a whale, to those exemplified in the “Philosophie Zoologique,” point strongly to the writings of Lamarck as the true suggester of Mr. Darwin's views of animated nature. We look, however, in vain for any instance of hypothetical transmutation in Lamarck so gross as the one above cited; we must descend to older illustrators of the favorite idea, to find an equivalent case of the bear in pursuit of water-insects, and we find one in the following:—

“Car il peut arriver, comme nous savons qu'en effet il arrive assez souvent, que les poissons ailés et volans chassant on étant chassés dans la mer, emportés du désir de la proie ou de la crainte de la mort, ou bien poussés peut-être à quelques pas du rivage par des vagues qu'excitoit une tempête, soient tombés dans des roseaux ou dans des herbages, d'où ensuite il ne leur fut pas possible de reprendre vers la mer l'essor qui les en avoit tirés, et qu'en cet état ils aient contracté une plus grande faculté de voler. Alors leurs nageoires n'étant plus baignées des eaux de la mer, se fendirent et se déjetèrent par la sécheresse. Tandis qu'ils trouverent dans les roseaux et les herbages dans lesquels ils étoient tombés, quelques aliments pour se soutenir, les tuyaux de leurs nageoires, séparés les uns des autres, se prolongèrent et se revêtirent de barbes; ou, pour parler plus juste, les membranes qui auparavant les avoient tenus collés les uns aux autres se métamorphosèrent. La barbe formée de ces pellicules déjetées s'allongea elle-même; la peau de ces animaux se revêtit insensiblement d'un duvet de la même couleur dont elle étoit peinte, et ce duvet grandit. Les petits ailerons qu'ils avoient sous le ventre, et qui comme leurs nageoires, leur avoient aidé à se promener dans la mer, devinrent des pieds, et leur servirent à marcher sur la terre. Il se fit encore d'autres petits changemens dans leur figure. Le bec et le col des uns s'allongèrent; ceux des autres se raccourcirent: il en fut de même du reste du corps. Cependant la conformité de la première figure subsiste dans le total; et elle est et sera toujours aisée à reconnoître.

“Examinez en effet toutes les espèces de poules, grosses et petites, même celles des Indes, celles qui sont huppées, ou celles qui ne le sont pas; celles dont les plumes sont à rebours telles qu'on en voit à Damiette, c'est-à-dire, dont le plumage est couché de la queue à la tête; vous trouverez dans la mer des espèces toutes semblables, écailleuses ou sans écailles. Toutes les espèces de perroquets dont les plumages sont si divers, les oiseaux les plus rares et les plus singulièrement marquetés sont conformes à des poissons peints, comme eux, de noir, de brun, de gris, de jaune,

\* Darwin, p. 184. (1st edition.)

\* Darwin, p. 1. (1st edition.)



de verd, de rouge, de violet, de couleur d'or et d'azur; et cela précisément dans les mêmes parties où les plumages de ces mêmes oiseaux sont diversifiés d'une manière si bizarre.\*

Demaillet, it must be admitted, enters more fully into the details of the operation of "natural selection," in changing the fish into the bird; and it is, perhaps, from this very "naïveté" in the exposition of his theory, that its weakness has been made so obvious to later zoölogists and comparative anatomists. Mr. Darwin rarely shows a fair front to these searching tests; the facts of the manner of transmutation, as they might have presented themselves to his fancy, are not stated with the "abandon" of the old French Philosopher. Vague and general as is the illustration based upon Hearne's remark, it is made still more vague in a later reprint of the volume "On the Origin of Species." It now reads, "In North America, the black bear was seen by Hearne swimming for hours with widely opened mouth, thus catching, almost like a whale, insects in the water." (Ed. 1860, p. 184.)

"Individuals, it is said, of every species, in a state of nature, annually perish," and "the survivors will be, for the most part, those of the strongest constitutions and the best adapted to provide for themselves and offspring, under the circumstances in which they exist." Now, let us test the applicability of this postulate to the gradual mutation of a specific form by some instance in Natural History eminently favorable for the assumed results. In many species, nature has superadded to general health and strength, particular weapons and combative instincts, which, as, e. g., in the deer-tribe, insure to the strongest, to the longest-winded, the largest-antlered, and the sharpest-snagged stags, the choice of the hinds and the chief share in the propagation of the next generation. In such peculiarly gifted species we have the most favorable conditions for testing one of the conclusions drawn by Messrs. Darwin and Wallace from this universally recognized "struggle for the preservation of life and kind." If the offspring, inheriting the advantages of their parents, did in their turn, however slightly and gradually, increase those advantages, and give birth to a still more favored progeny, with repetition of the result to the degree required by "nat-

ural selection," — then, according to the rate of modification experimentally proved in pigeons, we ought to find evidence of progressive increase in the combative qualities of antlers in those deer that for centuries have been under observation in our parks, and still more so in those that have fought and bred from the earliest historical times in the mountain wilds of Scotland. The element of "natural selection," above illustrated, either is, or is not, a law of nature. If it be one, the results should be forthcoming; more especially in those exceptional cases in which nature herself has superadded structures, as it were, expressly to illustrate the consequences of such "general struggle for the life of the individual and the continuance of the race." \* The antlers of deer are expressly given to the male, and permitted to him, in fighting trim, only at the combative sexual season; they fall and are renewed annually; they belong, moreover, to the most plastic and variable parts or appendages of the quadruped. Is it, then, a fact that the fallow-deer propagated under these influences in Windsor Forest, since the reign of William Rufus, now manifest in the superior condition of the antlers, as weapons, that amount and kind of change which the successions of generations under the influence of "natural selection" ought to have produced? Do the crowned antlers of the red deer of the nineteenth century surpass those of the turbaries and submerged forest-lands which date back long before the beginning of our English history? Does the variability of the artificially bred pigeon, or of the cultivated cabbage outweigh, in a philosophical consideration of the origin of species, those obstinate evidences of persistence of specific types and of inherent limitation of change of character, however closely the seat of such characters may be connected with the "best chance of taking care of self and of begetting offspring?" If certain bounds to the variability of specific characters be a law in nature, we then can see why the successive progeny of the best antlered deer, proved to be best by wager of battle, should never have exceeded the specific limit assigned to such best possible antlers under that law of limitation. If unlimited variability by "natural selection" be a law, we ought to see some degree of its operation in the peculiarly favorable test-instance just quoted.

That the variability of an organism to a certain extent is a constant and certain condition of life we admit, otherwise there

\* "Tellamed, ou Entretiens d'un Philosophe Indien avec un Missionnaire François, sur la Diminution de la Mer," etc., 8vo, Amsterdam, 1768. An edition in two volumes of this original and suggestive work, was printed, with the life of the author (Demaillet), at the Hague, in 1756. The passage quoted will be found at p. 166, tom. ii. of this edition.)

\* "Individual males have had, in successive generations, some slight advantage over other males in their weapons, and have transmitted these advantages to their male offspring." — Darwin, p. 89

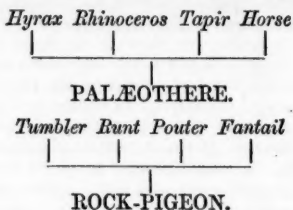


would be no distinguishable individuals of a species. The forester, by the operation of this law of variability, is able to distinguish his individual oaks, the shepherd his particular sheep, the teacher his several scholars. This true and proved law of variability is, in fact, the essential condition of individuality itself. We have searched in vain, from Demaillet to Darwin, for the evidence or the proof, that it is only necessary for one individual to vary, be it ever so little, in order to the conclusion that the variability is progressive and unlimited, so as, in the course of generations, to change the species, the genus, the order, or the class. We have no objection to this result of "natural selection" in the abstract; but we desire to have reason for our faith. What we object to is, that science should be compromised through the assumption of its true character by mere hypotheses, the logical consequences of which are of such deep importance.

The powers, aspirations, and missions of man are such as to raise the study of his origin and nature, inevitably and by the very necessity of the case, from the mere physiological to the psychological stage of scientific operations. Every step in the progress of this study has tended to obliterate the technical barriers by which logicians have sought to separate the inquiries relating to the several parts of man's nature. The considerations involved in the attempt to disclose the origin of the worm are inadequate to the requirements of the higher problem of the origin of man; and it may be that the conditions of that problem are beyond our present powers of acquiring certain knowledge.

To him, indeed, who may deem himself devoid of soul and as the brute that perisheth, any speculation, pointing, with the smallest feasibility, to an intelligible notion of the way of coming in of a lower organized species, may be sufficient, and he need concern himself no further about his own relations to a Creator. But when the members of the Royal Institution of Great Britain are taught by their evening lecturer that such a limited or inadequate view and treatment of the great problem exemplifies that application of science to which England owes her greatness, we take leave to remind the managers that it more truly parallels the abuse of science to which a neighboring nation, some seventy years since, owed its temporary degradation. By their fruits may the promoters of true and false philosophy be known. We gazed with amazement at the audacity of the dispenser of the hour's intellectual amusement, who, availing himself of the technical ignorance of the majority of his auditors, sought to blind them as

to the frail foundations of "natural selection" by such illustrations as the subjoined:



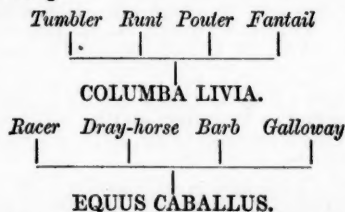
The above diagrams were set before an intelligent audience by a professor, in whom they naturally repose confidence as to facts specially belonging to his science, as parallel instances of departure from type: the one illustrating the extent and directions in which varieties diverge from a type form, in long course of time, by "natural selection;" the other showing the correlative examples of such divergence, in a short course of time, through human selection. He told them that, in the latter series, the skeleton varied in regard to the number of vertebræ; but did not remark that it was in the variable region of the tail, on which no ornithologist ever depended for a specific character, neither did he state that the alleged difference in the number of dorsal vertebræ\* was one that is merely simulated by a greater or less extent of the process of ankylosis over a region of the spinal column in which every vertebræ was originally distinct. With regard to the parallel diagram, no allusion was made to such differences in the relative position of the cranial bones as the following, viz.: that in the palæotherium, as in the tapir, the maxillary bones intervene between and separate the nasal bones from the intermaxillary bones; whilst in the horse, as in the hyrax, the nasal and intermaxillary bones are united as far as their extremities; that, consequently, the external nostril is bounded by four bones in the horse, but by six in its implied progenitor; that there is as marked a difference in the conformation of the orbit, which is encircled by the union of the malar with the frontal bone in the horse, but is left widely open or incomplete, by the want of such union in the same two cranial bones of the palæothere. The advocate of the "natural selection" view exaggerated resemblances and glossed over discrepancies of structure. The resemblance of the Palæothere to its four hypothetical descendants, in respect of their more generalized or more specialized structures, was flippantly affirmed to be as that of a father to his four sons! †

\* Darwin, p. 22.

† Professor Huxley's Lecture "On Species and Races and their Origin," Friday, February 10th,

Nothing was said to give his hearers a notion of the important difference between the horse and palæothere in the structure and implantation of the whole dental system. Yet the horse resembles the elephant in having a long mass of complexly interblended dental substances deeply implanted in a large simple socket; whilst the palæothere differs from both, in having a short mass or crown of differently disposed dental substances implanted by several long fangs in a correspondingly complex socket. To the competent anatomist a score of such anatomical differences would be present to the memory in contrasting the two alleged parallel series of differences from selection natural and human; to which differences in the palæontological series nothing comparable in essential value has been pointed out in the varieties of *Columba livia*. The competent palæontologist, moreover, would detect the superficial character of the knowledge that would interpose the tapir in any series leading from palæotherium: he would point to the eocene lophiodon as the true ancestor of the tapir on the derivative hypothesis.

Neither zoölogy nor physiology as yet, however, possesses a single fact to support the idea that six incisor and two canine teeth, as in the palæothere, could be blended or changed, by progressive transmutation, into the pair of large scalpriform teeth that projects from the fore part of the lower jaw in the hyrax or scriptural coney. The genuine cultivator of science and true representative of the minds on which the glory and greatness of nations depend, would feel bound to illustrate any series of observed varieties of a species by a true parallel. The hoofed mammals which afford this parallel with the diverging series of pigeons, are the following:—



Here the differences in regard to size, color, development of tegumentary appendages, number of caudal vertebræ, length or stuntedness of muzzle, relative length of limb to body, etc., are closely analogous with the diversities which Mr. Darwin has dwelt upon in the first chapter of his work. And not only are the subjects of the above diagrams

1860, Journal of the Royal Institution of Great Britain.

morphologically but physiologically alike; not merely are the differences of form and structure similar and equivalent, but the powers of procreation are the same. "The hybrids or mongrels from between all the domestic breeds of pigeons are perfectly fertile;" \* so, likewise, are the hybrids or mongrels from between all the domestic breeds of the horse. Now, as this is not the case with the hybrid between any variety of the horse and of the ass, it may be inferred that the physiological distinction would be, at least, as great, or more insuperable, between the horse and the tapir, or the rhinoceros, or the palæotherium. The infertility, or very rare fertility, of the solipedous mule, even when paired with a true horse or ass, and the absolute infertility of such hybrids *inter se*, are facts so notorious, that the professorial advocate of "natural selection" was compelled to admit that his alleged parallel broke down at the physiological test,—the most important element of the comparison.

It is assumed by Mr. Darwin that variations, useful in some way to each being, occur naturally in the course of thousands of generations (p. 80), that such variations are reproduced in the offspring, and, if in harmony with external circumstances, may be heightened in still further modified descendants of the species. The transmission and exaggeration of a variety, step by step, in the generative series, essential to the theory of "natural selection," implies the fertility of the individuals constituting the several steps of the series of transmutation. But numerous instances, familiar to every zoölogist, suggest an objection which seems fatal to the theory, since they show extreme peculiarities of structure and instinct in individuals that cannot transmit them, because they are doomed to perpetual sterility.

The most numerous and important members of the hive, which collect the pollen on their peculiarly expanded thighs, and the honey in their peculiarly valvular crop or "honey-bag," and which, in the construction of cells of a shape adapted to contain the greatest possible quantity of honey with least possible consumption of wax, have practically solved a recondite mathematical problem, are the neuters, or females with abortive sexual organs,—“non-breeding females” of our great physiologist Hunter. From the hypothetical protoplasmic progenitor of all animal species, what an enormous series of “slight modifications of structure and instinct” must have rolled, snow-ball like, along the articulate line of departure, to have accumulated, according to “natural selection,” in the *Apis mellifica*, which in the

\* Darwin, p. 26.

days of Moses exercised as now their structures and instincts in the "land flowing with milk and honey!"

So also in the family of ants, the neuters or sterile females form, in certain species, two, or even three castes,—soldiers, workers, nurses. In *Cryptocerus* the workers of one caste "carry a wonderful sort of shield on their heads;" in the Mexican genus, *Myrmecocystus*, the workers of one caste are fed by the workers of another caste, and have an enormously expanded abdomen where a sort of honey is secreted and stored, which, like domestic cattle they supply to the rest of the community. Mr. Darwin, with one of his usual happy illustrations, compares the workers of the "driver ant" (*Anomma*), to a "set of workmen building a house, of whom many were five feet four inches high, and many sixteen feet high; but we must suppose that the larger workmen had heads four instead of three times as big as those of the smaller men, and jaws nearly five times as big;" in short, the most grotesque and extravagant scene in a pantomime is realized in the industrial community of a West African ant.

Yet all these instances of exaggerated peculiarities of structure and instinct are manifested in individuals which never could have transmitted them.

No zoologist, perhaps, is better acquainted with these fatal exceptions to his principle of the organization of species by hereditary transmission of variation characters, than Mr. Darwin. He could not, with any pretension to free and candid discussion, pass over the chief instances which have checked the natural disposition of all zoologists to obtain inductively an intelligible idea of the most mysterious phenomena of their science. But the barrier at which Cuvier hesitated, Mr. Darwin rushes through, and thus he disposes of the difficulty:—

"We have even slight differences in the horns of different breeds of cattle in relation to an artificially imperfect state of the male sex; for oxen of certain breeds have longer horns than in other breeds, in comparison with the horns of the bulls or cows of the same breeds. Hence I can see no real difficulty in any character having become correlated with the sterile condition of certain members of insect communities: the difficulty lies in understanding how such correlated modifications of structure could have been slowly accumulated by natural selection.

"I have such faith in the powers of selection, that I do not doubt that a breed of cattle, always yielding oxen with extraordinarily long horns, could be slowly formed by carefully watching which individual bulls and cows, when matched, produce oxen with the longest horns; and yet no one ox could ever have propagated its kind. Thus I believe it has been with social insects: a

slight modification of structure, or instinct, correlated with the sterile condition of certain members of the community, has been advantageous to the community: consequently the fertile males and females of the same community flourished, and transmitted to their fertile offspring a tendency to produce sterile members having the same modification."—P. 238.

It is a notorious and constant fact, that the castrate bovine has longer horns than either the perfect male or female. The progressively elongating result in the case of the oxen, about which our theorist does not doubt, has not been proved experimentally. It is capable of proof or disproof. In scientific questions of far less import than the origin of animal species, involving our own, small value, if any, is attached to supposititious cases.

It is, doubtless, by no means necessary that we should sow a seed of the very cauliflower we eat in order to get more cauliflowers; seed of other individuals of the same stock will suffice. So the bee-keeper feels satisfied that the progeny of the impregnated young queen will exercise all the wonderful instincts which result in the production of wax and honey, as effectively as the virgin-sisters of the queen-mother, who were destroyed in the preceding winter. And our readers may well wonder what all this has to do with the explanation of the acquisition of the adaptive structures and instincts of neuter bees, by homeopathic doses of Lamarckian transmutation, accumulating through a long series of hereditary transmissions? We cannot reply; we can only quote, with no less amazement, our author:—

"This difficulty, though appearing insuperable, is lessened, or, as I believe, disappears, when it is remembered that selection may be applied to the family, as well as to the individual, and may thus gain the desired end. Thus, a well flavored vegetable is cooked, and the individual is destroyed; but the horticulturist sows seed of the same stock, and confidently expects to get nearly the same variety; breeders of cattle wish the flesh and fat to be well marbled together; the animal has been slaughtered, but the breeder goes with confidence to the same family."—P. 237.

Now every step in the production of the breed or family of cattle may have been observed and recorded; and many of the incidents of the transmutative journey of the edible variety of cabbage from the wild stock may be similarly known; but this is just the knowledge that we desiderate in regard to the creation of the honey-bee by the way of "natural selection;" and, instead of satisfying our craving with the mature fruit of inductive research, Mr. Darwin offers us the intellectual husks above quoted, endorsed

by his firm belief in their nutritive sufficiency!

To more intelligible propositions in support of his hypothesis, we marginally noted, as we perused them, the difficulties or exceptions which rose in our mind. We have still room for a few of these illustrations of the groundwork of "natural selection."

"From looking at species as only strongly marked and well-defined varieties, I was led to anticipate that the species of the larger genera in each country would oftener present varieties, than the species of the smaller genera. To test the truth of this anticipation I have arranged the plants of twelve countries, and the coleopterous insects of two districts, into two nearly equal masses, the species of the larger genera on one side, and those of the smaller genera on the other side, and it has invariably proved to be the case that a larger proportion of the species on the side of the larger genera present varieties, than on the side of the smaller genera."—P. 55.

The elephant is, however, a small genus, indeed, one of the smallest in the sense of the number of species composing it, which are indeed but two, the *Elephas Indicus* and *Elephas Africanus* of Cuvier. But the range of variety in both African and Indian kinds is by no means inconsiderable. Livingstone adds instances in the elephants of the Zambesi, and the terms "Dauntelah," "Mooknah," etc., applied by the Indian and Singhalese entrappers of the wild proboscideans to the different varieties that are captured, still more exemplify this tendency to vary in individuals of a "small genus." Another exception to Mr. Darwin's rule as strongly and quickly suggests itself in the genus *Pithecius*. Naturalists seem unwilling to admit more species than the Bornean Pongo (*Pithecius Wurmii*, seu *Satyrus* of Wurm), and the smaller orang (*P. morio*) since established by Owen. But the varieties in regard to the cranial crests, to color, to relative length of arms, appears by a memoir from the pen of the latter naturalist,\* to be both numerous and well marked. On the other hand, the species of the antelope genus have not hitherto presented any notable varieties to the observation of naturalists; and yet the genus, in respect to the number of these species, is one of the largest in the mammalian class. There may be, of course, a difference in different classes of organisms in this respect. Plants and invertebrates may better exemplify Mr. Darwin's proposition than fishes, reptiles, or quadrupeds. But an hypothesis applied to all living things can only

be sustained by laws and rules of a like generality of application.

Mr. Darwin's argument for a common origin of all the varieties of dovecot pigeon, leads him to affirm, "all recent experience shows that it is most difficult to get any wild animal to breed freely under domestication." (P. 24.) But the recent experience at the Zoological Gardens of London tells a different story. Three young individuals, two males and one female, of those most strange exotic quadrupeds, the giraffe, were transported from their African wildness to the menagerie in Regent's Park in 1836. No sooner had they attained the proper age in 1838 than they bred; and there has been no other interval in the repetition of the act than that which the phenomena of a fifteen months' gestation and seven months' suckling necessarily interpose. "Nine fawns have been produced without any casualty."† A pair of the largest and wildest of antelopes (the Eland, *A. Oreas*) is transported from the boundless sunny plains of South Africa to the confinement of a park in cloudy and rainy Lancashire; they breed freely there, and become the parents of elands now widely distributed over Great Britain, and promising in another century to be as common in our parks as fallow deer.‡ What conditions might seem more adverse to health and procreative power than such as are exemplified by the contrast of the den and the pond appropriated to the hippopotamus in the Jardin des Plantes, with that noble river where these most uncouth of African wild beasts disported themselves prior to their capture? Before two years elapse after the arrival of the young male and female, they produce a fine offspring.

Such are the signs of defective information which contribute, almost at each chapter, to check our confidence in the teachings and advocacy of the hypothesis of "Natural Selection." But, as we have before been led to remark, most of Mr. Darwin's statements elude, by their vagueness and incompleteness, the test of natural history facts. Thus he says:—

"I think it highly probable that our domestic dogs have "descended from several wild species." It may be so; but what are the species here referred to? Are they known, or named, or can they be defined? If so, why are they not indicated, so that the naturalist might have some means of judging of the degree of probability, or value of the surmise, and of its bearing on the hypothesis?

"Isolation, also," says Mr. Darwin, "is an important element in the process of natu-

\* "Characters of the skull of the male *Pithecius morio*, with remarks on the varieties of *Pithecius Satyrus*," by Professor Owen. Zoological Transactions, vol. iv. p. 163. 1856.

\* Edinb. Review, January, 1860, p. 179.

† Ib., pp. 167-9.



ral selection." But how can one select if a thing be "isolated?" Even using the word in the sense of a confined area, Mr. Darwin admits that the conditions of life "throughout such area, will tend to modify all the individuals of a species in the same manner, in relation to the same conditions." (P. 104.) No evidence, however, is given of a species having ever been created in that way; but granting the hypothetical influence and transmutation, there is no selection here. The author adds, "Although I do not doubt that isolation is of considerable importance in the production of new species, on the whole, I am inclined to believe, that largeness of area is of more importance in the production of species capable of spreading widely."—P. 105.

Now, on such a question as the origin of species, and in an express, formal, scientific treatise on the subject, the expression of a belief, where one looks for a demonstration, is simply provoking. We are not concerned in the author's beliefs or inclinations to believe. Belief is a state of mind short of actual knowledge. It is a state which may govern action, when based upon a tacit admission of the mind's incompetency to prove a proposition, coupled with submissive acceptance of an authoritative dogma, or worship of a favorite idol of the mind. We readily concede, and it needs, indeed, no ghost to reveal the fact, that the wider the area in which a species may be produced, the more widely it will spread. But we fail to discern its import in respect of the great question at issue.

We have read and studied with care most of the monographs conveying the results of close investigations of particular groups of animals but have not found what Darwin asserts to be the fact, at least as regards all those investigators of particular groups of animals and plants whose treatises he has read, viz., that their authors "are, one and all, firmly convinced that each of the well-marked forms or species was at the first independently created." Our experience has been that the monographers referred to have rarely committed themselves to any conjectural hypothesis whatever, upon the origin of the species which they have closely studied.

Darwin appeals from the "experienced naturalists whose minds are stocked with a multitude of facts" which he assumes to have been "viewed from a point of view opposite to his own," to the "few naturalists endowed with much flexibility of mind," for a favorable reception of his hypothesis. We must confess that the minds to whose conclusions we incline to bow belong to that truth-loving, truth-seeking, truth-imparting

class, which Robert Brown,\* Bojanus,† Rudolphi, Cuvier,‡ Ehrenberg,§ Herold,|| Kölliker,¶ and Siebold, worthily exemplify. The rightly and sagaciously generalizing intellect is associated with the power of endurance of continuous and laborious research, exemplarily manifested in such monographs as we have quoted below. Their authors are the men who trouble the intellectual world little with their beliefs, but enrich it greatly with their proofs. If close and long-continued research sustained by the determination to get accurate results, blunted, as Mr. Darwin seems to imply, the far-seeing discovering faculty, then are we driven to this paradox, viz., that the elucidation of the higher problems, nay the highest in biology, is to be sought for or expected in the lucubrations of those naturalists whose minds are not weighted or troubled with more than a discursive and superficial knowledge of nature.

Lasting and fruitful conclusions have, indeed, hitherto been based only on the possession of knowledge; now we are called upon to accept an hypothesis on the plea of want of knowledge. The geological record, it is averred, is so imperfect! But what human record is not? Especially must the record of past organisms be much less perfect than of present ones. We freely admit it. But when Mr. Darwin, in reference to the absence of the intermediate fossil forms required by his hypothesis—and only the zoötomical zoölogist can approximatively appreciate their immense numbers—the countless hosts of transitional links which, on "natural selection," must certainly have existed at one period or another of the world's history—when Mr. Darwin exclaims what may be, or what may not be, the forms yet forthcoming out of the graveyards of strata, we would reply, that our only ground for prophesying of what may come, is by the analogy of what has come to light. We may expect, e.g., a chambered-shell from a secondary rock; but not the evidence of a creature linking on the cuttle-fish to the lump-fish.

Mr. Darwin asks, "How is it that varieties, which I have called incipient species, become ultimately good and distinct species?" To which we rejoin with the question:—Do they become good and distinct species? Is there any one instance proved by observed

\* *Prodromus Floræ Novæ Hollandiæ.*

† *Anatome Testudinis Europææ.*

‡ *Mémoires pour servir à l'Anatomie des Mollusques.*

§ *Die Infusionsthierchen, als vollkommene Organismen.*

|| *Disquisitiones de Animalium vertebris carentium, etc.*

¶ *Entwicklungsgeschichte des Cephalopoden*



facts of such transmutation? We have searched the volume in vain for such. When we see the intervals that divide most species from their nearest congeners, in the recent and especially the fossil series, we either doubt the fact of progressive conversion, or, as Mr. Darwin remarks in his letter to Dr. Asa Gray,\* one's "imagination must fill up very wide blanks."

The last ichthyosaurus, by which the genus disappears in the chalk, is hardly distinguishable specifically from the first ichthyosaurus, which abruptly introduces that strange form of sea-lizard in the lias. The oldest Pterodactyle is as thorough and complete a one as the latest. No contrast can be more remarkable, nor, we believe, more instructive, than the abundance of evidence of the various species of ichthyosaurus throughout the marine strata of the oolitic and cretaceous periods, and the utter blank in reference to any form calculated to enlighten us as to whence the ichthyosaurus came, or what it graduated into, before or after those periods. The Enaliosauria of the secondary seas were superseded by the Cetacea of the tertiary ones.

Professor Agassiz affirms:—

"Between two successive geological periods, changes have taken place among plants and animals. But none of these primordial forms of life which naturalists call species, are known to have changed during any of these periods. It cannot be denied that the species of different successive periods are supposed by some naturalists to derive their distinguishing features from changes which have taken place in those of preceding ages, but this is a mere supposition, supported neither by physiological nor by geological evidence; and the assumption that animals and plants may change in a similar manner during one and the same period is equally gratuitous."†

Cuvier adduced the evidence of the birds and beasts which had been preserved in the tombs of Egypt, to prove that no change in their specific characters had taken place during the thousands of years—two, three, or five—which had elapsed, according to the monumental evidence, since the individuals of those species were the subjects of the mummifier's skill.

Professor Agassiz adduces evidence to show that there are animals of species now living which have been for a much longer period inhabitants of our globe.

"It has been possible," he writes, "to trace the formation and growth of our coral reefs, espe-

\* Proceedings of the Linnean Society, 1858, p. 61.

† Contributions to Natural History: Essay on Classification, p. 51.

cially in Florida, with sufficient precision to ascertain that it must take about eight thousand years for one of those coral walls to rise from its foundation to the level of the surface of the ocean. There are around the southernmost extremity of Florida alone, four such reefs, concentric with one another, which can be shown to have grown up one after the other. This gives for the beginning of the first of these reefs an age of over thirty thousand years; and yet the corals by which they were all built up are the same identical species in all of them. These facts, then, furnish as direct evidence as we can obtain in any branch of physical inquiry, that some, at least, of the species of animals now existing, have been in existence over thirty thousand years, and have not undergone the slightest change during the whole of that period."\*

To this, of course, the transmutationists reply that a still longer period of time might do what thirty thousand years have not done.

Professor Baden Powell, for example, affirms:—"Though each species may have possessed its peculiarities unchanged for a lapse of time, the fact that when long periods are considered, all those of our earlier period are replaced by new ones at a later period, proves that species change in the end, provided a sufficiently long time is granted." But here lies the fallacy: it merely proves that species are changed, it gives us no evidence as to the mode of change; transmutation, gradual or abrupt, is in this case mere assumption. We have no objection on any score to the change; we have the greatest desire to know how it is brought about. Owen has long stated his belief that some pre-ordained law or secondary cause is operative in bringing about the change; but our knowledge of such law, if such exists, can only be acquired on the prescribed terms. We, therefore, regard the painstaking and minute comparisons by Cuvier of the osteological and every other character that could be tested in the mummified ibis, cat, or crocodile, with those of the species living in his time; and the equally philosophical investigations of the polypes operating at an interval of thirty thousand years in the building up of coral reefs, by the profound palæontologist of Neuchâtel, as of far higher value in reference to the inductive determination of the question of the origin of species than the speculations of Demaillet, Buffon, Lamarck, "Vestiges," Baden Powell, or Darwin.

The essential element in the complex idea of species, as it has been variously framed and defined by naturalists, viz., the blood-relationship between all the individuals of such species, is annihilated on the hypothesis of "natural selection." According to

\* Ibid., p. 53.

this view a genus, a family, an order, a class, a sub-kingdom,—the individuals severally representing these grades of difference or relationship,—now differ from individuals of the same species only in degree: the species, like every other group, is a mere creature of the brain; it is no longer from nature. With the present evidence from form, struc-

ture, and procreative phenomena, of the truth of the opposite proposition, that "classification is the task of science, but species the work of nature," we believe that this aphorism will endure; we are certain that it has not yet been refuted; and we repeat in the words of Linnæus, "*Classis et Ordo est sapientiæ, Species naturæ opus.*"

AN ENGLISH LADY OF RANK AS THE WIFE OF A BEDOUIN CHIEF.—"Hadji," the Syrian correspondent of the *Boston Traveller*, furnishes the following account of the freaks of an English lady of rank and beauty, who has lately become the wife of a Bedouin chief:—

"At the hotel of Mr. Rarey I found a most singular specimen of the English woman, who seems to emulate the character of the famous and once powerful Lady Hester Stanhope. Known as Lady Digby, she excites the mirth and ridicule of the natives, but as the wife of Sheikh Miguil—the Bedouin chief of Damascus—she wields a powerful influence among the Bedouins of the desert. Possessed of an ample fortune, Lady Ellenborough, once the favorite of the court of St. James, after her fall and divorce the wife of a Russian nobleman, and then of a Greek prince, established herself in Damascus a few years ago. Here she prevailed upon a noted Bedouin chief to put away his wives and live with her. They spend their winters in town and their summers in the desert, where she visits the old wives of the sheikh, taking with her many beautiful presents to appease their wrath and jealousy.

"She has frequently been seen in the desert, habited in the one loose robe of the children of the sandy waste, barefooted and bareheaded. In Damascus she wears the long white sheet, which covers her figure, but lives in good English style, still retaining the luxuries of civilized life and a French maid. Her constant attendance upon Protestant worship, when in town, gives travellers frequent opportunities of seeing her; and being a majestic woman in appearance, and still retaining traces of a wondrous beauty, she always excites attention and inquiry. I hear that she has lately had her marriage with the sheikh legalized by the cadi of Damascus, and recorded by the British consulate.

"Her lord and master—for in this country a husband is most emphatically a 'lord of creation'—possesses nothing either in face or figure to attract a woman of cultivated taste. Small in stature, darker than a mulatto, with small, piercing black eyes, and walking with the swag-

gering gait of the Bedouin, he disappoints every one who sees him; for one would naturally expect to see something in the appearance of the man which would account for this singular freak of an English lady of rank and fortune in choosing for herself a husband from among the rude sons of the desert. But such expectations are far from being met at sight of this most inferior specimen of the Bedouin race. This interesting couple are now on their way for Europe, where Lady Digby hopes to educate and civilize her tawny spouse."

MR. CHURCH evinces almost as much invention in bestowing names upon his pictures as he does in painting them. "Twilight in the Wilderness," the title of his new landscape is almost as good a name as "The Heart of the Andes;" and there are many who think the new picture is the better one of the two. It has, without a doubt, more poetical feeling and unity of design, and, in certain parts, has never been excelled by any of his previous performances. Now, that he has finished this picture, he will probably go to work upon his studies of icebergs, which he brought from Newfoundland last year, and give us a composition of ocean grandeur worthy of a companionship with his Niagara, his Heart of the Andes, and his Twilight in the Wilderness. —*Tribune.*

CLERGYMEN who wish to know how to advise, manage, or direct certain worldly, discordant and troublesome members, may find it worth while to have the heads of such examined, their true characters thoroughly delineated and laid open to view, by which they may be the better enabled to govern themselves, and to make less trouble. Professor Fowler, 308 Broadway, gives his exclusive attention to practical phrenology. Clergymen are invited to call.

A FRAGMENT of his dearly bought experience is given incidentally by Mr. Sala, in his last paper on "Hogarth," where he relates how "an early patron" once pressed him to write "a good poem"—"in the Byron style," you "know," and offered him a guinea for it down.

From Chambers's Journal.

#### A BOTTLE DEPARTMENT.

IN the month of May, 1859, a South Australian fisherman saw a bottle washed on shore near the mouth of the river Murray. He picked it up, and found it quite incrustated with small shells. On opening the bottle, a piece of paper appeared, on which a few words were written, to the effect that the writer was on board a ship coming from Liverpool; that on the 4th of May, 1857, the ship was near the Cape de Verd Islands; that the paper, enclosed in a bottle, was about to be cast into the sea; and that the finder of the paper, whoever he might be, was requested to send it to the writer's brother at Sheffield.

Let us make the singular voyage of this paper the text for a brief discourse.

That light, solid bodies, floating on the surface of the ocean, will move hither and thither by the action of ebb and flood tide, we all know; that a strong wind will have the same effect, irrespective of tide, we also know; and sailors know, if landsmen do not, that there are moving currents in the ocean independent both of winds and tides. But it is not known, until after long-continued and carefully made observations, what is the average amount and direction of movement at any particular place. In all probability, he was no very profound philosopher who first conceived the idea of testing this matter by watching floating bodies on the surface of the water; it was rather the manner of realizing the idea, than the idea itself, that deserves notice. A glass bottle, or a metal vessel shaped like a bottle, will sink in water if left open, because the specific gravity of glass and metal is greater than that of water; but if the bottle be securely corked and sealed, it will float, on account of the interior being filled with air instead of water. Let us suppose that a passenger, on the way to Australia, throws such a bottle overboard; unless it strikes against a rock, it may float about for a long period of time. But how is the thrower ever to know whether the bottle will float, or on what shore it may be thrown? "Well," says some ingenious individual, whose name has not been handed down to posterity, "let us write a few words on a piece of paper, requesting the finder of the bottle to send the paper to some particular address." The right plan is hit upon. If the finder be good-natured enough to respond to the appeal, and, moreover, make a record of the when and the where of the finding, he may render it certain that the bottle has performed a long and curious voyage, although the details of the voyage are yet unknown. Thus the Australian fisherman picked up a bottle which

had for two years been knocking about the ocean, and must, under any circumstances, have travelled many thousand miles, let its course have been what it might.

Seventeen years ago, it occurred to Commander Becher that the *Nautical Magazine* might be made the vehicle for a systematic record of these interesting bottle-voyages. For a period of thirty or forty years previously, the newspapers had occasional paragraphs to the effect that a bottle had been "picked up," containing such and such items of information; and the question arose, whether these records, collected and tabulated, might not in time give useful information concerning the currents, tides, and winds of the ocean. Each record, it is true, is subject to possible calamities, numerous and varied. If the bottle be not well corked and sealed, water will enter, and bottle and paper will go to the bottom. If it strikes against a rock, its fate is equally disastrous. If it floats to some shore, it may be at a spot where it escapes human observation for a year or more, or even forever. If it be really picked up and opened, the contents may be unreadable by the finder; or he may not care about it; or he may be too poor or too ignorant to forward the paper to the required destination. Any one of these contingencies may happen. Still, good may result from a collecting of those papers which *do* come safely to hand, even if they be only one in a hundred. So Commander Becher thought, and he carried out his plan in an ingenious manner. In order to keep his plan within practicable limits at first, he confined his attention to a portion of the Atlantic Ocean. He laid down a chart on Mercator's projection, extending from six degrees south latitude to sixty-three degrees north latitude; and from the coasts of Europe and Africa on the east, to those of North and South America on the west. This chart he caused to be engraved to the size of about eighteen inches by twelve. On it he laid down a sort of history of every bottle-voyage of which authentic information had come to hand. He made a black spot to denote the place of the ship when the bottle was thrown into the sea; another spot to denote the place where the bottle was picked up; and a straight line connecting the two. He would of course have preferred to trace the crooked route—often, doubtless, a *very* crooked route—which the bottle had really followed; but this was precisely the kind of knowledge which he did not possess, and which, indeed, was the very problem to be ultimately solved. One hundred and nineteen bottles had their voyages and travels put into print in this way. Very curious it is to see the lines of route as thus marked out. Some—let the actual course

have been what they may—display a tendency from east to west; others as decided a leaning from west to east; and each is a member of a group pretty constant in its travelling characteristics. For instance, most of those which were thrown into the sea near the north-west coast of Africa were, if found at all, discovered on the shores of some or other among the West India Islands. If set afloat anywhere on the route between England and New York, they have a tendency to effect a landing about the Scilly Islands, or on the Cornwall or Devon coasts. If our arctic explorers launched a bottle when about to enter the stormy seas of Greenland, there was a fair chance that it would land somewhere on the Orkneys or the Hebrides; on the other hand, some of the bottles appear to have made most eccentric voyages; and it was evident that much had yet to be learned before the varying effects of currents, tides, and winds could be known.

This bottle-chart attracted a good deal of attention among nautical men. It was rendered more useful by several pages of appended text, giving the chief particulars of each bottle-voyage—such as the name of the ship, the signature of the person who cast the bottle into the sea, the date, the latitude and longitude, the place where, and the time when, the bottle was picked up, and the interval which had elapsed between the immersion and the finding of the bottle. A correspondence which followed the publication of the chart rendered evident the fact, that large numbers of these erratic bottles are always floating about, having a much greater chance of being lost altogether than of ever coming to hand. A surgeon on board an Indiaman stated that he threw bottles overboard *every day* during the voyage, each bottle containing a paper with a memorandum such as those above averted to; so far as he knew, very few of those bottles reached the hands of persons who, took any further interest in the matter. Sometimes the bottle, or its paper, had much to go through before the wishes of the writer could be fulfilled. In one instance, the commander of the *Chanticleer* threw a bottle overboard in the Atlantic; it was picked up by a peasant on the coast of Spain four months afterwards; he kept it two months, not knowing what to make of the matter; it passed into the hands of a more intelligent Spaniard, who sent it to the British consul at Corunna, by whom it was forwarded to the secretary of the admiralty. Sometimes the object of the writer was evidently a useful one—that of contributing his mite towards a history of the winds and waves; while others displayed mere vanity and waggery, the paper being

filled with odd scraps of verses and jokes. If there was a request that the paper should be sent to the admiralty, foreign officials displayed readiness in complying with the request; and even if the parties concerned were only moving in private life, the same thing was often courteously done. Thus, a bottle was picked up on the French coast, near Bayonne, which had been thrown into the sea nine months before by a passenger on board the merchant-ship *Lady Louisa*. The writing within directed that the paper should be sent to the passenger's brother, to a particular address at Woolwich; and after passing through many hands, the paper was transmitted by the minister of marine as directed.

The *Nautical Magazine* became a recognized treasury for narratives of these bottle-voyages; and the number increased so fast, that Commander Becher deemed it desirable to revise in 1852 the chart which he had prepared in 1843. He added sixty-two to the former number, and rendered his chart a much more fully occupied piece of paper than before. Again did the contributions accumulate, and again was the engraver set to work; for in 1856, Commander (now Captain) Becher caused a third edition of the chart to be prepared. A Mediterranean series was also commenced in 1853, and beginnings have been made for an Indian and Pacific series; but for a long time to come the Atlantic will be the chief scene of bottle-voyaging, owing to the large number of ships that are always crossing it.

Some of these bottles make very long voyages, and, considering the circumstance, often in a short space of time, though in other cases the period has extended over several years. As we have already remarked, however, both *time* and *space* are left very vaguely determined, for there is a great doubt whether the bottle will be picked up just when it has concluded its voyage; while the route followed is in almost every instance much longer than a straight line between the two points. So far as concerns the measured distance in a straight line, we find instances of 690 miles, 2,020 miles, 2,260 miles, 3,600 miles, and 3,900 miles. The bottle found on the Australian coast in 1859, adverted to in our opening paragraph, must have made a voyage of very many thousand miles, for the editor of the *Nautical Magazine*, judging from the known directions of currents, inferred that it had been carried from the Cape de Verd Islands eastward or south-east by the Guinea current, then westward by the equatorial current, then along the American coast by the Brazilian current, then across the South Atlantic eastward towards the Cape of Good Hope, and then across a wide



stretch of ocean to Australia. In 1858, a bottle travelled from Manilla to the Moluccas, about 1,000 miles, in six months, showing that there are pretty active influences at work in those seas, even without allowing for any unknown sojourn of the bottle on the shore. This sojourn is indeed sometimes a long one. A bottle from the *Thunder*, in 1847, was nearly three years before it was picked up; one from the *Lark*, in 1838, four years; one from the *Manning*, in 1810, five years; one from the *Lady Louisa*, in 1830, nine years; one from the *Symmetry*, in 1825, ten years; one from the *Carshalton Park*, in 1827, eleven years. The most lengthened delay ever recorded, was that of a bottle from the *Blonde*, which, thrown into the sea on the 23d of September, 1826, on a voyage from Liverpool to New York, was picked up on the French coast on the 15th of June, 1842—nearly sixteen years afterwards. How long it had remained in that spot no one can tell.

It has been contended by some persons, seamen, *savans*, and others, that the voyages of the bottles are often too capricious to render much scientific service; and they appeal to the bottle-chart for many curious instances of this. Some authorities assert that there is a current to the east from Labrador and Newfoundland towards the British Islands; yet Sir John Ross asserts, that in 1818, he threw into the sea twenty-five copper cylinders, when his arctic ship was about entering Davis' Strait; and not one of these floating cylinders was ever known to come to hand—a fact which appeared to him somewhat incompatible with received notions. In 1819, two bottles were thrown out on one day from the *Newcastle*; one was picked up on the coast of Ireland, and the other at the far-distant Azores.

But it is very fairly contended, on the other hand, that these so-called "capricious" voyages are not capricious at all; but depend on physical causes which, though not well understood at present, may by and by be rendered intelligible by these very voyages themselves. One or more of Ross' cylinders may, for aught we know, be at this moment snugly housed in some creek or cove among the scantily inhabited Hebrides. Of the two bottles, one of which travelled to Ireland, and the other to the Azores, both may have travelled together to the last-named place, where one ran ashore, while the other got into another current which swept it round to Ireland; for it is known that some of the bottles take remarkably circuitous routes, according as they are caught in particular currents. Thus, a bottle was thrown into the sea from the *Prima Donna* ship in 1850, off Cape Coast in Africa; it was picked up on the coast of Cornwall; and

from the course of the various currents, it is believed that this bottle had been first carried south by the Guinea current, then west by the equatorial current, then north-west into the Gulf of Mexico, and then by the Gulf Stream to Cornwall. Many singular examples are on record, tending to show that, on an average, there is an eastward movement of the surface-drift in the northern part of the Atlantic, and a westward in the tropical part. The *Corsair* threw out two bottles in 1838; one was picked up 160 miles off, the other 250 miles, but both had followed nearly the same general direction. The *Blonde*, already mentioned, threw out two bottles in 1826, within five days of each other; one was espied fourteen years afterwards, and the other nearly sixteen years, but both nearly on the same part of the French coast. The *Alexander* threw out two bottles on the same day in 1818; both were found fourteen months afterwards on our western coasts. When Captains Collinson and M'Clure started for Behring's Strait in 1850, in search of Sir John Franklin, they both threw bottles into the sea while sailing down the Atlantic: the bottle from the *Investigator* (M'Clure) was launched on the 22d of February, about 600 miles north of the equator; that from the *Enterprise* (Collinson) was launched nearly at the equator, on the 3d of March. After voyages of 186 and 367 days, respectively, these bottles were picked up almost exactly at the same spot on the Honduras coast. The *Wellington* threw out two bottles in 1836, on two consecutive days: one was found nine months afterwards, the other, not till after four years; but this was due to the fact that the second bottle happened to reach the same coast at a spot very little frequented. The direction of the current, or at least of the surface-drift, was very singularly shown by the voyage of a bottle in 1842. A ship left Thurso with Highland emigrants for Canada; when 1,500 miles out, a bottle was launched; and this bottle found its way to a part of the coast within two miles of the very port whence the ship had sailed five months before.

Few persons now doubt the usefulness of this system. All we have to guard against is, hasty inferences from the details of any particular voyage. Captain Becher remarks, in connection with one of his charts: "The uniformity in the direction of the courses between the points of departure and arrival is very remarkable in most parts of the chart. In the equatorial regions, and in the more northern latitudes, when the effects of the Gulf Stream and westerly winds prevail, this uniformity of direction is remarkable; as also the courses of those few which have been

thrown over on the eastern limits of that stream. So that in many parts of the ocean before us, a good guess might be made at the direction which a bottle would take when committed to the sea. So far as the surface-drift is concerned, the experiment has been successful." The admiralty share this opinion; for they have encouraged the officers of the queen's ships to launch a bottle occasionally.

Of the thousands—nay, millions—of beer-bottles, pale-ale bottles, wine bottles, brandy-bottles, pickle-bottles which are taken out annually by ships leaving our shores, any one is suitable for this purpose, if properly secured; but Captain Fishbourne, of the hydrographer's department, has suggested a better arrangement for those who really wish to regard this matter as one of scientific interest. He suggests that the bottles should be made white by the introduction of oxide of arsenic into the liquid glass of which they are made, in order that they may be more visible while floating. He also advises that, when a bottle is picked up at sea (not on the shore), it should be opened, the paper read, and another paper inserted with it, stating the particulars of the finding; after which the bottle is to be again sealed, and thrown into the sea at once. If this were done three or four times in succession, three or four points in the track of the bottle would be made known, and a rough approximation to its curve of movement might be made. So far as we can detect, by examining the chart and records, this ingenious suggestion has not yet been acted on.

One of the most remarkable examples on record, not of the voyage, but of the finding, of a floating messenger, occupied the attention of newspaper-readers eight or nine years

ago. It is known that in 1493, Columbus, when near the Azores, encountered a dreadful storm; and it is stated in an old book of voyages that, on that occasion, being doubtful whether he would live to reach Spain again, he wrote a few particulars of his voyage on a piece of parchment, enclosed it in a keg or small wooden cask, and cast it into the sea—hoping that the document might reach the hands of his joint sovereigns, Ferdinand and Isabella. On the 27th of August, 1851 (so said the *Times*, on the authority of an American newspaper), Captain d'Auberville, in the bark *Chieftain* of Boston, picked up a floating substance on the African coast, opposite Gibraltar. It was so covered with barnacles and sea-shells that its nature could not at first be determined; but on closer scrutiny, it proved to be a small cedar keg. When opened, the keg displayed within it a cocoanut shell, coated with some resinous composition; and within the cocoanut was a piece of parchment covered with very old writing, which none on board could read. A merchant at Gibraltar, however, deciphered it, and found that it purported to be written by Christopher Columbus in 1493; that the ship was in a dreadful storm between Spain and the Azores; and that Columbus had determined to throw these documents, in three kegs, into the sea, in the hope that one of them, at least, might reach the shore. This story is so interesting that one yearns to believe it true. A keg *might* have remained for more than three centuries and a half unseen on the African coast; but still, we ask, where is the keg, and where is the parchment? There are persons in Europe who would almost give its weight in gold for such a precious testimony of the great navigator.

M. DELAUNAY is engaged in preparing a set of tables of the moon's motions, which are in process of publication by the Academy of Sciences. M. Le Verrier objected to them that they were incorrect,—that his theory of the moon's motion did not concur with the observations. M. Delaunay replied with much acrimony, and a pretty quarrel ensued, which for several weeks crowded the *séances* of the Academy. When M. Le Verrier's last reply was finished in the *séance* of March 12th, the greater portion of the audience left the hall. M. Dumas, the great chemist, is said to have remarked, with

much bitterness: "I did not know that there were so many astronomers in Paris."

**BURYING IN CROSS-ROADS.**—The practice of burying in cross-roads has in modern times been regarded as a mark of indignity; but such was not its original intention. In ancient times, "it was usual to erect crosses at the junction of four cross-roads as a place self-consecrated, according to the piety of the age; and it was not with a notion of indignity, but in a spirit of charity, that those excluded from holy rites were buried at the crossing roads, as places next in sanctity to consecrated ground."—*British Magazine*.

PART II.  
CHAPTER VI.

"My pride, that took  
Fully easily all impressions from below,  
Would not look up, or half despised the height,  
To which I could not, or I would not climb,  
I thought I could not breathe in that fine air."

—IDYLS OF THE KING.

"CAN you come and take a turn in the Temple Gardens, Phæbe?" asked Robert, on the way from church, the day after Owen's visit to Woolstone Lane.

Phæbe rejoiced, for she had scarcely seen him since his return from Castle Blanch, and his state of mind was a mystery to her. It was long, however, before he afforded her any clue. He paced on, grave and abstracted, and they had many times gone up and down the least frequented path, before he abruptly said, "I have asked Mr. Parsons to give me a title for Holy Orders."

"I don't quite know what that means."

"How simple you are, Phæbe," he said, impatiently; "it means that St. Wulstan's should be my first curacy. May my labors be accepted as an endeavor to atone for some of the evil we cause here."

"Dear Robin! what did Mr. Parsons say? Was he not very glad?"

"No; there lies the doubt."

"Doubt?"

"Yes. He told me that he had engaged as many curates as he has means for. I answered that my stipend need be no consideration, for I only wished to spend on the parish, but he was not satisfied. Many incumbents don't like to have curates of independent means; I believe it has an amateur appearance."

"Mr. Parsons cannot think you would not be devoted."

"I hope to convince him that I may be trusted. It is all that is left me now."

"It will be very cruel to you, and to the poor people, if he will not," said Phæbe, warmly; "what will papa and Mervyn say?"

"I shall not mention it till all is settled; I have my father's consent to my choice of a profession, and I do not think myself bound to let him dictate my course as a minister. I owe a higher duty, and if his business scatters the seeds of vice, surely, 'obedience in the Lord' should not prevent me for trying to counteract them."

It was a case of conscience to be only judged by himself, and where even a sister

like Phæbe could do little but hope for the best, so she expressed a cheerful hope that her father must know that it was right, and that he would care less, now that he was away, and pleased with Augusta's prospects.

"Yes," said Robert, "he already thinks me such a fool, that it may be indifferent to him in what particular manner I act it out."

"And how does it stand with Mr. Parsons?"

"He will give me an answer to-morrow evening, provided I continue in the same mind. There is no chance of my not doing so. My time of suspense is over!" and the words absolutely sounded like relief, though the set, stern face, and the long breaths at each pause told another tale.

"I did not think she would really have gone!" said Phæbe.

"This once, and we will mention her no more. It is not merely this expedition, but all I saw at Wrapworth convinced me that I should risk my faithfulness to my calling by connecting myself with one, who, with all her loveliness and generosity, lives upon excitement. She is the very light of poor Prendergast's eyes, and he cannot endure to say a word in her dispraise; she is constantly doing acts of kindness in his parish, and is much beloved there, yet he could not conceal how much trouble she gives him by her want of judgment and wilfulness; patronizing and forgetting capriciously, and attending to no remonstrance. You saw yourself the treatment of that schoolmistress. I thought the more of this, because Prendergast is so fond of her, and does her full justice. No; her very aspect proves that a parish priest has no business to think of her."

Large tears swelled in Phæbe's eyes. The first vision of her youth was melting away, and she detected no relenting in his grave, resolute voice.

"Shall you tell her?" was all she could say.

"That is the question. At one time she gave me reason to think that she accepted a claim to be considered in my plans, and understood what I never concealed. Latterly she has appeared to withdraw all encouragement, to reject every advance, and yet—Phæbe, tell me, whether she has given you any reason to suppose that she ever was in earnest with me."

"I know she respects and likes you better than any one, and speaks of you like no one else," said Phæbe; then pausing, and speaking more diffidently, though with a smile, "I think she looks up to you so much, that she is afraid to put herself in your power, for fear she should be made to give up her odd ways in spite of herself, and yet that she has no notion of losing you. Did you see her face at the station?"

"I would not! I could not meet her eyes! I snatched my hand from the little clinging fingers," and Robert's voice almost became a gasp. "It was not fit that the spell should be renewed. She would be miserable, I under constant temptation, if I endeavored to make her share my work! Best as it is, she has so cast me off that my honor is no longer bound to her; but I cannot tell whether it be due to her to let her know how it is with me, or whether it would be mere coxcombry."

"The Sunday that she spent here," said Phæbe, slowly, "she had a talk with me. I wrote it down. Miss Fennimore says it is the safest way—"

"Where is it?" cried Robert.

"I kept it in my pocket-book, for fear any one should see it, and it should do harm. Here it is, if it will help you. I am afraid I made things worse, but I did not know what to say."

It was one of the boldest experiments ever made by a sister; for what man could brook the sight of an unvarnished statement of his proxy's pleading, or help imputing the failure to the go-between?

"I would not have had this happen for a thousand pounds!" was his acknowledgment. "Child as you are, Phæbe, had you not sense to know, that no woman could endure to have that said, which should scarcely be implied? I wonder no longer at her studied avoidance."

"If it be all my bad management, cannot it be set right?" humbly and hopefully said Phæbe.

"There is no right!" he said. "There, take it back. It settles the question. The security you childishly showed, was treated as offensive presumption on my part. It would be presuming yet further to make a formal withdrawal of what was never accepted."

"Then is it my doing? Have I made mischief between you, and put you apart?" said poor Phæbe, in great distress. "Can't I make up for it?"

"You? No, you were only an over plain-spoken child, and brought about the crisis, that must have come somehow. It is not what you have done, or not done; it is what Lucy Sandbrook has said and done, that shows that I must have done with her forever."

"And yet," said Phæbe, taking this as forgiveness, "you see she never believed that you would give her up. If she did, I am sure she would not have gone."

"She thinks her power over me stronger than my principles. She challenges me—desires you to tell me so. We shall see."

He spoke as a man whose steadfastness had been defied, and who was piqued on proving it to the utmost. Such feelings may savor of the wrath of man; they may need the purifying of chastening, and they often impel far beyond the bounds of sober judgment; but no doubt they likewise frequently render that easy which would otherwise have appeared impossible, and which, if done in haste, may be regretted, but not repented, at leisure.

Under some circumstances, the harshness of youth is a healthy symptom, proving force of character and conviction, though that is only when the foremost victim is self. Robert was far from perfect, and it might be doubted whether he were entering the right track in the right way, but at least his heart was found, and there was a fair hope that his failings in working their punishment, might work their cure.

It was a thorough brotherly and Christian spirit that before entering the house, he compelled himself to say, "Don't vex yourself, Phæbe, I know you did the best you could, as kindly as you could. It made no real difference, and it was best that she should know the truth."

"Thank you, dear Robin," cried Phæbe, grateful for the consolation; "I am glad you do not think I misrepresented."

"You are always accurate," he answered. "If you did any thing undesirable, it was representing at all. But that is nothing to the purpose. It is all over now, and thank you for your constant good-will and patience, my dear. There! now then it is an understood thing that her name is never spoken between us."

Meanwhile, Robert's proposal was under discussion by the elders. Mr. Parsons had



no abstract dread of a wealthy curate, but he hesitated to accept gratuitous services, and distrusted plans formed under the impulse of disappointment or of enthusiasm, since, in the event of a change, both parties might be embarrassed. There was danger, too, of collisions with his family, and Mr. Parsons took counsel with Miss Charlecote, knowing indeed that where her affections were concerned, her opinions must be taken with a qualification, but relying on the good sense formed by rectitude of purpose.

Honor's affection for Robert Fulmort had always been moderated by Owen's antagonism, her moderation in superlatives commanded explicit credence, and Mr. Parsons inferred more, instead of less, than she expressed; better able as he was to estimate that manly character, gaining force with growth, and though slow to discern between good and evil, always firm to the duty when it was once perceived, and thus rising with the elevation of the standard. The undemonstrative temper, and tardiness in adopting extra habits of religious observance and profession, which had disappointed Honor, struck the clergyman as evidences both of sincerity and evenness of development, proving the sterling reality of what had been attained.

"Not taking, but trusty," judged the vicar.

But the lad was an angry lover. How tantalizing to be offered a fourth curate, with a long purse, only to find St. Wulstan's serving as an outlet for a lover's quarrel, and the youth restless and restive ere the end of his diaconate!

"How savage you are," said his wife, "as if the parish would be hurt by his help or his presence. If he goes—let him go—some other help will come."

"And don't deprive him of the advantage of a good master," said Honor.

"This wretched cure is not worth flattery," he said, smiling.

"Nay," said Mrs. Parsons, "how often have I heard you rejoice that you started here."

"Under Mr. Charlecote, yes."

"You are the depository of his traditions," said Honor, "hand them on to Robert. I wish nothing better for Owen."

Mr. Parsons wished something better for

himself, and averted a reply, by speaking of Robert as accepted.

Robert's next request was to be made useful in the parish, while preparing for his ordination in the autumn ember week, and though there were demurs as to unnecessarily anticipating the strain on health and strength, he obtained his wish in mercy to a state only to be alleviated by the realities of labor.

So few difficulties were started by his family, that Honora suspected that Mr. Fulmort, always chiefly occupied by what was immediately before him, hardly realized that by taking an assistant curacy at St. Wulstan's, his son became one of the pastors of Whittington streets, great and little, Richard Courts, Cicely Row, Alice Lane, Cat Alley, and Turnagain Corner. Scarcely, however, was this settled, when a despatch arrived from Dublin, headed, "The Fast Fly Fishers; or, the modern St. Kevin," containing in Ingoldsby legend-like rhymes, the entire narration of the Glendalough predicament of the "Fast and Fair," and concluding with a piece of prose, by the same author, assuring his sweet Honey, that the poem though strange, was true, that he had just seen the angelic anglers on board the steamer, and it would not be for lack of good advice on his part, if Lucy did not present herself at Woolstone Lane, to partake of the dish called humble pie, on the derivation whereof antiquaries were divided.

Half amused, half vexed by his levity, and wholly relieved and hopeful, Honora could not help showing Owen's performance to Phæbe for the sake of its cleverness, but she found the child too young and simple to enter into it, for the whole effect was an entreaty that Robert might not see it, only hear the facts.

Rather annoyed by this want of appreciation of Owen's wit, Honora saw, nevertheless, that Phæbe had come to a right conclusion. The breach was not likely to be diminished by finding that the wilful girl had exposed herself to ridicule, and the Fulmort nature had so little sense of the ludicrous, that this good-natured brotherly satire would be taken for mere derision.

So Honor left it to Phæbe to give her own version, only wishing that the catastrophe had come to his knowledge before his ar-

rangements had been made with Mr. Parsons.

Phæbe had some difficulty in telling her story. Robert at first silenced her peremptorily, but after ten minutes relented, and said, moodily, "Well, let me hear!" He listened without relaxing a muscle of his rigid countenance, and when Phæbe ended by saying that Miss Charlecote had ordered Lucy's room to be prepared, thinking that she might present herself at any moment, he said, "Take care that you warn me when she comes. I shall go home that minute."

"Robert, Robert, if she come home grieved and knowing better—"

"I will not see her!" he repeated. "I made her taking this journey the test! The result is nothing to me! Phæbe, I trust to you that no intended good nature of Miss Charlecote's should bring us together. Promise me."

Phæbe could do nothing but promise, and not another sentence could she obtain from her brother; indeed his face looked so formidable in its sternness, that she would have been a bold maiden to have tried.

Honora augured truly, that not only was his stern nature deeply offended, but that he was quite as much in dread of coming under the power of Lucy's fascinations, as Cilla had ever been of his strength. Such mutual aversion was really a token of the force of influence upon each, and Honor assured Phæbe that all would come right.

"Let her only come home and be good, and you will see, Phæbe! She will not be the worse for an alarm, nor even for waiting till after his two years at St. Wulstan's."

The reception of the travellers at Castle Blanch was certainly not mortifying by creating any excitement. Charles Charters said his worst in the words, "One week!" and his wife was glad to have some one to write her notes.

This indifference fretted Lucy. She found herself loathing the perfumy rooms, the sleepy voice, and hardly able to sit still in her restless impatience of Lolly's platitudes and of Charles' *insouciance*, while Rashe could never be liked again. Even a lecture from Honor Charlecote would have been infinitely preferable, and one grim look of Robert's would be bliss!

No one knew whether Miss Charlecote were still in town, nor whether Augusta Ful-

mort were to be married in England or abroad; and as to Miss Murrell, Lolly languidly wondered what it was that she had heard.

Hungering for some one whom she could trust, Lucilla took an early breakfast in her own room, and walked to Wrapworth, hoping to catch the curate lingering over his coffee and letters. From a distance, however, she espied his form disappearing in the school-porch, and approaching, heard his voice reading prayers, and the children's chanted response. Coming to the oriel, she looked in. There were the rows of shiny heads, fair, brown, and black; there were the long sable back and chopped-hay locks of the curate—but where a queenlike figure had of old been wont to bend, she beheld a tallow face, with sandy hair under the most precise of net caps, and a straight thread paper shape in scanty gray stuff, and white apron.

Dizzy with wrathful consternation, Cilla threw herself on one of the seats of the porch, shaking her foot, and biting her lip, frantic to know the truth, yet too much incensed to enter, even when the hum of united voices ceased, the rushing sound of rising was over, and measured footsteps pattered to the classes, where the manly interrogations sounded alternately with the shrill little answers.

Clump, clump, came the heavy feet of a laggard, her head bent over her book, her thick lips vainly conning the unlearned task, unaware of the presence of the young lady, till Lucilla touched her, saying, "What, Martha, a ten o'clock scholar?"

She gave a little cry, opened her staring eyes, and dropped a curtesy.

"Whom have you hear for mistress?" asked Lucilla.

"Please, ma'am, governess is runned away."

"What do you mean?"

"Yes, ma'am," replied the girl, developing powers of volubility such as scholastic relations with her had left unsuspected. "She ran away last Saturday was a week, and there was nobody to open the school when we came to it a Sunday morning, and we had holidays all last week, ma'am, and mother was terrified \* out of her life, and father, he said he wouldn't have me never go for to do no such thing; and that he

\* Terrify, to tease or worry.

didn't want no fine ladies, as was always spitting of me."

"Every one will seem to spite you, if you keep no better hours," said Lucy, little edified by Martha's virtuous indignation.

The girl had scarcely entered the school before the clergyman stood on the threshold, and was seized by both hands, with the words, "O Mr. Prendergast! what is this?"

"You here, Cilla? What's the matter? What has brought you back?"

"Had you not heard? A sprain of Rattia's, and other things. Never mind. What's all this?"

"Ah! I knew you would be sadly grieved!"

"So you did frighten her away!"

"I never meant it. I tried to act for the best. She was spoken to, by myself and others, but nobody could make any impression, and we could only give her notice to go at the harvest holidays. She took it with her usual grand air—"

"Which is really misery and despair. Oh, why did I go? Go on!"

"I wrote to the mother, advising her, if possible, to come and be with the girl till the holidays. That was on Thursday week, and the old woman promised to come on the Monday—wrote a very proper letter, allowing for the methodistical phrases—but on the Saturday, it was observed that the house was not opened, and on Sunday morning I got a note—if you'll come in I'll show it to you."

He presently discovered it among multitudinous other papers on his chimney-piece. Within a ladylike envelope was a thick, satin-paper, queen's-sized note, containing these words:—

"REVEREND SIR—It is with the deepest feelings of regret for the unsatisfactory appearance of my late conduct that I venture to address you, but time will enable me to account for all, and I can at the present moment only entreat you to pardon any inconvenience I may have occasioned by the precipitancy of my departure. Credit me, reverend and dear sir, it was only the law of necessity that could have compelled me to act in a manner that may appear questionable. Your feeling heart will excuse my reserve when you are informed of the whole. In the mean time, I am only permitted to mention that this morning I became a happy

wife. With heartfelt thanks for all the kindness I have received, I remain,

"Reverend sir,

"Your obedient servant,

"EDNA."

"Not one message to me," exclaimed Lucilla.

"Her not having had the impudence is the only redeeming thing!"

"I did not think she would have left no word for me," said Lucy, who knew she had been kinder than her wont, and was really wounded. "Happy wife? Who can it be?"

"Happy wife!" repeated the curate. "It is miserable fool, most likely, by this time."

"No surname signed! What's the postmark? Only Charing Cross. Could you find out nothing, or did you not think it worth while to look?"

"What do you take me for, Cilla? I inquired at the station, but she had not been there, and on the Monday I went to London, and saw the mother, who was in great distress, for she had had a letter much like mine, only more unsatisfactory, throwing out absurd hints about grandeur and prosperity—poor deluded simpleton!"

"She distinctly says she is married."

"Yes, but she gives no name nor place. What's that worth? After such duplicity as she has been practising so long, I don't know how to take her statement. Those people are pleased to talk of a marriage in the sight of heaven, when they mean the devil's own work!"

"No, no! I will not think it!"

"Then don't, my dear. You were very young and innocent, and thought no harm."

"I'm not young—I'm not innocent!" furiously said Cilly. "Tell me downright all you suspect."

"I'm not given to suspecting," said the poor clergyman, half in deprecation, half in reproof, but I am afraid it is a bad business. If she had married a servant, or any one in her own rank, there would have been no need of concealing the name, at least from her mother. I feared at first that it was one of your cousin Charles' friends, but there seems more reason to suppose that one of the musical people at your concert at the castle may have thought her voice a good speculation for the stage."

"He would marry her to secure her gains."

"If so, why the secrecy?"

"Mrs. Jenkins has taught you to make it as bad as possible," burst out Lucy. "Oh, why was not I at home? Is it too late to trace her, and proclaim her innocence?"

"I was wishing for your help. I went to Mr. Charteris to ask who the performers were, but he knew nothing about them, and said you and his sister had managed it all."

"The director was Derval. He is fairly respectable, at least I know nothing to the contrary. I'll make Charlie write. There was an Italian with a black beard and a bass voice, whom we have had several times. I saw him looking at her. Just tell me what sort of woman is the mother. She lets lodgings; does not she?"

"Yes, in Little Whittington Street."

"Dear me! I trust she is no friend of Honor Charlecote's."

"Out of her beat, I should think. She dissents."

"What a blessing! I beg your pardon, but if any thing could be an aggravation, it would be Honor Charlecote's moralities."

"So you were not aware of the dissent!"

"And you are going to set that down as more deceit, as if it were the poor thing's business to denounce her mother. Now, to show you that I can be sure that Edna was brought up to the Church, I will tell you her antecedents. Her father was Sir Thomas Deane's butler; they lived in the village, and she was very much in the nursery with the Miss Deanes—had some lessons from the governess. There was some notion of making her a nursery governess, but Sir Thomas died, the ladies went abroad, taking her father with them, Edna was sent to a training school, and the mother went to live in the city with a relation who let lodgings, and who has since died, leaving the concern to Mrs. Murrell, whose husband was killed by an upset of the carriage on the Alps."

"I heard all that, and plenty besides! Poor woman! she was in such distress that one could not but let her pour it all out; but I declare the din rang in my ears the whole night after! A very nice, respectable-looking body she was, with jet-black eyes like diamonds, and a rosy, countrified complexion, quite a treat to see in that grimy place, her widow's cap as white as snow, but, oh, such a tongue! She would give me all her spiritual experiences—how she was converted

by an awakening minister in Cat Alley, and yet had a great respect for such ministers of the Church as fed their flocks with sincere milk, mixed up with the biography of all the shopman and clerks who ever lodged there, and to whom she acted as a mother!"

"It was not their fault that she did not act as a mother-in-law. Edna has told me of the unpleasantness of being at home on account of the young men."

"Exactly! I was spared none of the chances she might have had, but the only thing worthy of note was about a cashier, who surreptitiously brought a friend from the "hopera," to overhear her singing hymns on the Sunday evening, and thus led to an offer on his part to have her brought out on the stage."

"Ha! could that have come to any thing?"

"No. Mrs. Murrell's suspicions took that direction, and we hunted down the cashier and the friend, but they were quite exonerated. It only proves that her voice has an unfortunate value."

"If she be gone off with the Italian bass, I can't say think it a fatal sign that she was slow to present him to her domestic Mause Headrigg, who no doubt would deliberately prefer the boards of her coffin to the boards of the theatre. Well, come along—we will get a letter from Charles, and rescue her—I mean clear her."

"Wont you look into school, and see how we go on? The women complained so bitterly of having their children on their hands, though I am sure they had sent them to school seldom enough of late, that I got this young woman from Mrs. Stuart's asylum till the holidays. I think we shall let her stay on, she has a good deal of method, and all seem pleased with the change."

"You have your wish of a fright. No, I thank you! I'm not so glad as the rest of you to get rid of refinement and superiority."

There was no answer, and more touched by silence than reply, she hastily said, "Never mind! I dare say she may do better for the children; but you know I, who am hard of caring for any one, did care for poor Edna, and I can't stand pæans over your new broom."

Mr. Prendergast gave a smile such as was only evoked by his late rector's little daughter, and answered, "No one can be more concerned than I. She was not in her place



here, that was certain, and I ought to have minded that she was not thrust into temptation. I shall remember it with shame to my dying day.

"Which means to say that so should I."

"No, you did not know so much of the evils of the world."

"I told you before, Mr. Pendy, that I'm twenty times more sophisticated than you are. You talk of knowing the world? I wish I didn't. I'm tired of everybody!"

And on the way home she described her expedition, and had the pleasure of the curate's sympathy, if not his entire approval. Perhaps there was no other being whom she so thoroughly treated as a friend, actually like a woman friend, chiefly because he thoroughly believed in her, and was very blind to her faults. Robert would have given worlds to have found her *once*, what Mr. Prendergast found her *always*.

She left him to wait in the drawing-room, while she went on her mission, but presently rushed back in a fury. Nobody cared a rush for the catastrophe. Lolly begged her not to be so excited about a trifle, it made her quite nervous; and the others laughed at her; Rashe pretended to think it a fine chance to have changed "the life of an early Christian," for the triumphs of the stage; and Charles scouted the idea of writing to the man's employer. "He call Derval to account for all the tricks of his fiddlers and singers? Much obliged!"

Mr. Prendergast decided on going to town by the next train to make inquiries of Derval himself, without further loss of time, and Cilly declared that she would go with him, and force the conceited professor to attend; but the curate, who had never found any difficulty in enforcing his own dignity, and thought it no business for a young lady, declined her company, unless, he said, she were going to spend the day with Miss Charlecote.

"I've a great mind to go to her for good and all. Let her fall upon me for all and sundry. It will do me good to hear a decent woman speak again! besides, poor old soul, she will be so highly gratified, that she will be quite meek" (and so will some one else, quoth the perverse little heart); "I'll put up a few things, and not delay you."

"This is very sudden!" said the curate, wishing to keep the peace between her and

her friends, and not willing that his sunbeam should fleet so "like the Borealis race!"

"Will it not annoy your cousins?"

"They ought to be annoyed!"

"And are you certain that you would find Miss Charlecote in town? I thought her stay was to be short."

"I'm certain of nothing, but that every place is detestable."

"What would you do if you did not find her?"

"Go on to Euston Square. Do you think I don't know my way to Hiltonbury, or that I should not get welcome enough—ay, and too much, there?"

"Then if you are so uncertain of her movements, do you not think you had better let me learn them before you start. She might not even be gone home, and you would not like to come back here again; if—"

"Like a dog that has been out hunting," said Lucilla, who could bear opposition from this quarter as from no other. "You won't take the responsibility, that's the fact. Well, you may go and reconnoitre, if you will; but mind, if you say one word of what brings you to town, I shall never go near the Holt at all. To hear—whenver the Raymonds, or any other of the godly school-keeping sort come to dinner—of the direful effects of certificated schoolmistresses would drive me to such distraction that I cannot answer for the consequences."

"I am sure it is not a fact to proclaim."

"Ah! but if you run against Mr. Parsons, you'll never abstain from telling him of his stray lamb, nor from condoling with him upon the wolf in Cat Alley. Now, there's a fair hope of his having more on his hands than to get his fingers scratched by meddling with the cats, and so that this may remain unknown. So consider yourself sworn to secrecy."

Mr. Prendergast promised. The good man was a bit of a gossip, so perhaps her precaution was not thrown away, for he could hardly have helped seeking the sympathy of a brother pastor, especially of him to whose fold the wanderer primarily belonged. Nor did Lucy feel certain of not telling the whole herself in some unguarded moment of confidence. All she cared for was, that the story should not transpire through some other source, and be brandished over her head as an illustration of all the maxims that she had

so often spurned. She ran after Mr. Prendergast after he had taken leave, to warn him against calling in Woolstone Lane, and desired him instead to go to Master's shop, where it was sure to be known whether Miss Charlecote were in town or not.

Mr. Prendergast secretly did grateful honor to the consideration that would not let him plod all the weary way into the city. Little did he guess that it was one part mistrust of his silence, and three parts reviving pride, which forbade that Honora should know that he had received any such commission.

The day was spent in pleasant anticipations of the gratitude and satisfaction that would be excited by her magnanimous return, and her pardon to Honor and to Robert for having been in the right. She knew she could own it so graciously, that Robert would be overpowered with compunction, and forever beholden to her, and now that the Charterises were so unmitigatedly hateful, it was time to lay herself out for goodness, and fling him the rein, with only now and then a jerk, to remind him that she was a free agent.

A long-talked-of journey on the continent was to come to pass as soon as Horatia's strain was well. In spite of wealth and splendor, Eloisa had found herself disappointed in the step that she had hoped her marriage would give her into the most *élite* circles. Languid and indolent as her mind was, she could not but perceive that where Ratia was intimate and at ease, she continued on terms of form and ceremony, and her husband felt more keenly that the society in his house was not what it had been in his mother's time. They both became restless, and Lolly, who had already lived much abroad, dreaded the dulness of an English winter in the country, while Charles knew that he had already spent more than he liked to recollect, and that the only means of keeping her contented at Castle Blanch, would be to continue most ruinous expenses.

With all these secret motives, the tour was projected as a scheme of amusement, and the details were discussed between Charles and Rashe with great animation, making the soberness of Hiltonbury appear both tedious and sombre, though all the time Lucy felt that there she should again meet that which her heart both feared and

yearned for, and without which these pleasures would be but shadows of enjoyment. Yet that they were not including her in their party gave her a sense of angry neglect and impatience. She wanted to reject their invitation indignantly, and make a merit of the sacrifice.

The after-dinner discussion was in full progress when she was called out to speak to Mr. Prendergast. Heated, wearied, and choking with dust, he would not come beyond the hall, but before going home, he had walked all this distance to tell her the result of his expedition. Derval had not been uncivil, but evidently thought the suspicion an affront to his *corps*, which at present was dispersed by the end of the season. The Italian bass was a married man, and had returned to his own country. The clue had failed. The poor lost leaf must be left to drift upon unknown winds.

"But," said the curate, by way of compensation, "at Master's, I found Miss Charlecote herself, and gave your message."

"I gave no message."

"No, no; because you would not send me up into the city, but I told her all you would have had to say, and how nearly you had come up with me, only I would not let you for fear she should have left town."

Cilla's face did not conceal her annoyance, but not understanding her in the least, he continued, "I'm sure no one could speak more kindly or considerately than she did. Her eyes filled with tears, and she must be heartily fond of you at the bottom, though may be rather injudicious and strict, but after what I told her, you need have no fears."

"Did you ever know me have any?"

"Ah, well! you don't like the word, but at any rate she thinks you behaved with great spirit and discretion under the circumstances, and quite overlooks any little imprudence. She hopes to see you the day after to-morrow, and will write and tell you so."

Perhaps no intentional slander ever gave the object greater annoyance than Cilly experienced on learning that the good curate had, in the innocence of his heart, represented her as in a state of proper feeling, and interceded for her, and it was all the worse because it was impossible to her to damp his

kind satisfaction, otherwise than by a brief "Thank you," the tone of which he did not comprehend.

"Was she alone?" she asked.

"Didn't I tell you the young lady was with her, and the brother."

"Robert Fulmort?" and Cilla's heart sank at finding that it could not have been he who had been with Owen.

"Ay, the young fellow that slept at my house. He has taken a curacy at St. Wulstan's."

"Did he tell you so!" with an ill-concealed start of consternation.

"Not he; lads have strange manners. I should have thought, after the terms we were upon here, he need not have been quite so much absorbed in his book as never to speak!"

"He has plenty in him instead of manners," said Lucilla; "but I'll take him in hand for it!"

Though Lucilla's instinct of defence had spoken up for Robert, she felt hurt at his treatment of her old friend, and could only excuse it by a strong fit of shy conscious moodiness. His taking the curacy was only explicable, she thought, as a mode of showing his displeasure with herself, since he could not ask her to marry into Whittingtonia, but "That must be all nonsense," thought she, "I will soon have him down off his high horse, and Mr. Parsons will never keep him to his engagement—silly fellow to have made it—or if he does, I shall only have the longer to plague him. It will do him good. Let me see! he will come down to-morrow with Honor's note. I'll put on my lilac muslin with the innocent little frill, and do my hair under his favorite net, and look like such a horrid little meek ringdove that he will be perfectly disgusted with himself for having ever taken me for a fishing eagle. He will be abject, and I'll be generous, and not give another peck till it has grown intolerably stupid to go on being good, or till he presumes!"

For the first time for many weeks Lucilla awoke with the impression that something pleasant was about to befall her, and her wild heart was in a state of glad flutter as she donned the quiet dress, and found that the subdued coloring and graver style rendered her more softly lovely than she had ever seen herself.

The letters were on the breakfast-table when she came down, the earliest as usual, and one was from Honor Charlecote, the first sight striking her with vexation as discomfiting her hopes that it would come by a welcome bearer. Yet that might be no reason why he should not yet run down.

She tore it open.

"My dearest Lucy—until I met Mr. Prendergast yesterday, I was not sure that you had actually returned, or I would not have delayed an hour in assuring you, if you could not doubt it, that my pardon is ever ready for you.

"Many thanks," was the muttered comment. "O that poor, dear, stupid man, would that I had stopped his mouth!"

"I never doubted that your refinement and sense of propriety would be revolted at the consequences of what I always saw to be mere thoughtlessness—"

"Dearly beloved of an old maid is, I told you so!")

"—but I am delighted to hear that my dear child showed so much true delicacy and dignity in her trying predicament—"

("Delighted to find her dear child not absolutely lost to decorum! Thanks again.")

"—and I console myself for the pain it has given by the trust that experience has proved a better teacher than precept."

("Where did she find that grand sentence?")

"So that good may result from past evil and present suffering, and that you may have learnt to distrust those who would lead you to disregard the dictates of your own better sense."

("Meaning her own self!")

"I have said all this by letter that we may cast aside all that is painful when we meet, and only to feel that I am welcoming my child, doubly dear, because she comes owning her error."

("I dare say! We like to be magnanimous; don't we? O, Mr. Prendergast! I could beat you!")

"Our first kiss shall seal your pardon, dearest, and not a word shall pass to remind you of this distressing page in your history."

("Distressing! Excellent fun it was. I shall make her hear my diary, if I persuade myself to encounter this intolerable kiss of peace. It will be a mercy if I don't serve

her as the thief in the fable did his mother when he was going to be hanged.")

"I will meet you at the station by any train on Saturday that you like to appoint, and early next week we will go down to what I am sure you have felt is your only true home."

("Have I? Oh! she has heard of their journey, and thinks this my only alternative. As if I could not go with them if I chose—I wish they would ask me though. They shall! I'll not be driven up to the Holt as my last resource, and live there under a system of mild browbeating, because I can't help it. No, no! Robin shall find it takes a vast deal of persuasion to bend me to swallow so much pardon in milk and water. I wonder if there's time to change this spooney simplicity, and come out in something spicy, with a dash of the Bloomer. But, may be, there's some news of him in the other sheet, now she has delivered her conscience of her rigmarole. Oh! here it is—")

"Phæbe will go home with us, as she is, according to the family system, not summoned to her sister's wedding. Robert leaves London on Saturday morning, to fetch his books, etc., from Oxford, Mr. Parsons having consented to give him a title for holy orders, and to let him assist in the parish until the next ember week. I think, dear girl, that it should not be concealed from you that this step was taken as soon as he heard that you had actually failed for Ireland, and that he does not intend to return until we are in the country."

("Does he not? Another act of coercion! I suppose you put him up to this, madam, as a pleasing course of discipline. You think you have the whip hand of me; do you? Pooh! See if he'll stay at Oxford!")

"I feel for the grief I'm inflicting—"

("Oh, so you complacently think 'now I have made her sorry!'"")

"—but I believe uncertainty, waiting, and heart sickness would cost you far more. Trust me, as one who has felt it, that it is far better to feel one's self unworthy than to learn to doubt or distrust the worthiness or constancy of another."

("My father, to wit? A pretty thing to say to his daughter! What right has she to be pining and complaining after him? He,

the unworthy one! I'll never forgive that conceited inference! Just because he could not stand sentiment! Master Robert gone! Wont I soon have him repenting of his outbreak?")

"I have no doubt that his feelings are unchanged, and that he is solely influenced by principle. He is evidently exceedingly unhappy under all his reserve—"

("He shall be more so, till he behaves himself, and comes back humble! I've no notion of his flying out in this way.")

"—and though I have not exchanged a word with him on the subject, I am certain that his good opinion will be retrieved with infinite joy to himself as soon as you make it possible for his judgment to be satisfied with your conduct and sentiments. Grieved as I am, it is with a hopeful sorrow, for I am sure that nothing is wanting on your part but that consistency and sobriety of behavior of which you have newly learnt the necessity on other grounds. The Parsonses have gone to their own house, so you will not find any one here but two who will feel for you in silence, and we shall soon be in the quiet of the Holt, where you shall have all that can give you peace or comfort from your ever-loving old

"H. C."

"Feel for me! Never. Don't you wish you may get it? Teach the catechism and feed caterpillars till such time as it pleases Mrs. Honor to write up and say 'the specimen is tame!' How nice! No, no. I'll not be frightened into their lording it over me! I know a better way! Let Mr. Robert find out how little I care, and get himself heartily sick of St. Wulstan's, till it is, 'turn again Whittington indeed!' Poor fellow, I hate it, but he must be cured of his airs, and have a good fright. Why don't they ask me to go to Paris with them? Where can I go, if they don't? To Mary Cranford's? Stupid place, but I will show that I'm not so hard up as to have no place but the Holt to go to! If it were only possible to stay with Mr. Prendergast, it would be best of all! Can't I tell him to catch a chaperon for me? Then he would think Honor a regular dragon, which would be a shame, for it was nobody's fault but his! I shall tell him, I'm like the Christian religion, for which people are always making apologies that it doesn't want! Two years! Patience! It will be very good for Robin,



and four-and-twenty is quite soon enough to bite off one's wings, and found an ant-hill. As to being bullied into being kissed, pitied, pardoned, and trained by Honor, I'll never sink so low! No, at no price."

Poor Mr. Prendergast! Did ever a more innocent mischief-maker exist?

Poor Honora! Little did she guess that the letter written in such love, such sympathy, such longing hope, would only excite fierce rebellion.

Yet it was at the words of Moses that the king's heart was hardened; and what was the end? He was taken at his word. "Thou shalt see my face no more."

To be asked to join the party on their tour had become Lucilla's prime desire, if only that she might not feel neglected, or driven back to Hiltensbury by absolute necessity; and when the husband and wife came down, the wish was uppermost in her mind.

Eloisa remarked on her quiet style of dress, and observed that it would be quite the thing in Paris, where people were so much less *outré* than here.

"I have nothing to do with Paris."

"Oh! surely you go with us!" said Eloisa; "I like to take you out, because you are in so different a style of beauty, and you talk and save one trouble! Will not she go, Charles?"

"You see, Lolly wants you for effect!" he said, sneeringly. "But you are always welcome, Cilly, we are wofully slow when you aint there to keep us going, and I should like to show you a thing or two. I only did not ask you, because I thought you had not hit it off with Rashe, or have you made it up?"

"Oh! Rashe and I understand each other," said Cilly, secure that though she would never treat Rashe with her former confidence, yet as long as they travelled *en grand seigneur*, there was no fear of collisions of temper.

"Rashe is a good creature," said Lolly, "but she is so fast and so eccentric that I like to have you, Cilly, you look so much younger, and more ladylike."

"One thing more," said Charles, in his character of head of the family, "shouldn't you look up Miss Charlecote, Cilly? There's Owen straining the leash pretty hard, and you must look about you, that she does not

take up with these new pets of her's and cheat you."

"The Fulmorts? Stuff! They have more already than they know what to do with."

"The very reason she will leave them the more. I declare, Cilly," he added, half in jest, half in earnest, "the only security for you and Owen is in a double marriage. Perhaps she projects it. You fire up as if she had!"

"If she had, do you think I should go back?" said Cilly, trying to answer lightly, though her cheeks were in a flame. "No, no, I'm not going to let slip a chance of Paris."

She stopped short, dismayed at having committed herself, and Horatia coming down, was told by acclamation, that Cilly was going.

"Of course she is," said forgiving and forgetting Rashe. "Little Cilly left behind, to serve for food to the Rouge Dragon? No, no! I should have no fun in life without her."

Rashe forgot the past far more easily than Cilla could ever do. There was a certain guilty delight in writing

"MY DEAR HONOR,—Many thanks for your letter, and intended *kindnesses*. The scene must, however, be deferred, as my cousins mean to winter at Paris, and I can't resist the chance of hooking a marshal, or a prince or two. Rashe's strain was a great sell, but we had capital fun, and shall hope for more success another season. I would send you my diary if it were written out fair. We go so soon that I can't run up to London, so I hope no one will be disturbed on my account.

"Your affectionate

CILLY."

No need to say how often Lucilla would have liked to have recalled that note for addition or diminution, how many misgivings she suffered on her peculiar mode of catching Robins, how frequent were her disgusts with her cousin, and how often she felt like a captive. The captive of her own self-will.

"That's right!" said Horatia to Lolly, "I was mortally afraid she would stay at home to fall a prey to the incipient parson, but now he is choked off, and Calthorp is really in earnest, we shall have the dear little morsel doing well yet.

*Poems and Essays.* From The Examiner. By the late William Caldwell Roscoe. Edited, with a Prefatory Memoir, by his Brother-in-Law, Richard Holt Hutton. In Two Volumes. Chapman and Hall.

THESE volumes contain all that was written for the public by a man of singular worth and refined taste, who died last summer at the early age of thirty-five. They will share with the *Essays and Remains* of Alfred Vaughan a permanent place among the unobtrusive books that lie about our literature, with the beauty and truth of a short life of promise perfectly expressed in them. The subject of Mr. R. H. Hutton's delicately shaded Memoir, which says all that can complete a human interest in the collected *Poems and Essays* which it introduces, was the grandson of the biographer of Leo X., by form of faith a Unitarian, and trained to the bar, which, for defect of health and other reasons, he exchanged for partnership in a stone quarry and literary ease. Alfred Vaughan, born in the same year with the younger Roscoe, and living to a like age, had begun his labor in the world as a Non-conformist minister. The two men, however, differing in theological impressions, were kindred in their characters. In both we find delicacy of spiritual aspiration, activity of criticism at once honest and subtle, a play of winning humor, a sense of poetry, and a marked tendency rather to reflection than to action. Alfred Vaughan was the richer in acquired knowledge, William Roscoe applied to the reading that he shared with the million, individual reflection, always interesting, often new. His character is thus carefully summed up by his brother-in-law, Mr. Hutton, in the Prefatory Memoir:—

"I never knew any other man whose death could have made so deep a rent in the hearts and lives of other men outside the circle of his own family. His rich humor, his singular harmony of character, his social ease and insight, the ideal depth and patient meditateness of his judgment, his public spirit and manly political interests, the sincerity and trustfulness of his friendship, the refined and human character of his tastes, the perfect veracity and light fresh beauty of his imagination, and the true humility of his faith, had made him an object of hope as well as love to many of his companions. There were several, I believe, who would have been really more elated by his success than by their own; who, had he gained a poet's fame, would have felt their own life brighter; and who have lost in him one of the main vital springs of their own happiness."

We are tempted to illustrate the character of the mind that speaks in these two volumes by one or two more extracts from Mr.

Hutton's Memoir. It is a piece of biography based upon private affection, partial and yet judicious in its tone, that within a little space has reproduced with a singular delicacy the chief lights and shades of the character it represents. From a letter to himself Mr. Hutton furnishes one illustration of the tone of his friend's humor.

"He wrote to me from Wales a year or two ago: 'Farming prospers in the main; it is a very good thing to combine with literature, and has an excellent tendency to make one covetous of trifling gains. I always insist on seeing every day the large parcels of copper produced by the sale of milk. I ask with interest whether there is twopence more than yesterday; I am dejected when there is a falling off of fourpence. All the money we get is made into five-shilling packets of coppers, and stowed away in a cupboard. This gives a ponderous sensation of wealth, makes it impossible for thieves to take it all away at once, and prevents people calling to have their bills paid until they have an opportunity of bringing a horse and cart.'"

And there is a trait of character nicely observed in the remark upon Mr. Roscoe's delight in amusing children with tales "of which pelicans, puffins, grasshoppers, crickets, ponies, or dogs were the heroes."

"*Reynard the Fox* was one of his favorite books as a child; and it almost 'broke his heart,' he said, when in later life, he met with a beautifully illustrated edition of it which was fitted with a 'moral conclusion.' It was, he said, 'like the wicked doctor who put pills instead of plums into his pudding.'"

"The true charm of the animal world for him was, that it had independent life enough of its own to call much fancy and insight into play in interpreting it, and yet was so completely *unmoral*. It gave a free range and sufficient hints to excite the imagination, without calling out that exhausting effort by which the spirit reaches into a world above itself. Mr. Roscoe says in his essay on ghosts, that the occupation which the new spirit-media attribute to the world of angels is about as noble as it would be for man to occupy himself in breathing into the mind of a dog the suggestions 'bark,' 'smell a rat,' or 'in dictating the dreams and waking thoughts of a growing litter of pigs.' This remark brings with inexpressible humor and force before the mind the real existence of a quasi-natural world in the lower creation, on the conscious life of which moral and spiritual law has no bearing whatever, nay, with which it stands in grotesque contrast. And hence exactly its attraction for him. The facts of natural history give a kind of glimpse of the pleasures, and domestic occupations, and politics, so to say, of such a world—hints which his imagination could expand to almost any extent without any of that tension which its higher tasks require. The effort to conceive the cares and aims of the weasel and the water-rat was not only a plunge into a fresh and independent world, but one beyond the

reach of those haunting moral and spiritual lights and shadows, which sometimes strained Mr. Roscoe's imagination beyond a healthy temper."

Mr. Roscoe's skill in verse—and the first volume of his *Remains* consists entirely of two tragedies and many poems—is illustrated, together with much of his character, in these lines:—

"TO LITTLE A. C., IN THE GARDEN AT EAST-BURY.

"Come my beauty, come my bird;  
We two will wander, and no third

Shall mar that sweetest solitude

Of a garden and a child,

When the fresh elms are first in bud,

And western winds blow mild.

"Clasp that short-reaching arm about a neck  
Strip'd of a deeper love's more close embrace,

And with the softness of thy baby-cheek  
Press roses on a care-distained face.

"What? set thee down, because the air  
Ruffles too boldly thy brown hair?

Walk then, and as thy tiny boot

Presses the greenness of the sod,

Teach me to see that tottering foot

Uplifted and set down by God;

"Teach me a stronger, tenderer hand than mine

Sways every motion of thy infant frame;

Bid me take hold, like thee, and not repine,—

Weak with my errors and deserved shame.

"How? home again? ah, that soft laughter

Tells me what voice thou hankerest after.

Run, run, with that bright shining face,

And little hands stretched forth apart,

Into a mother's fond embrace,

Close, closer to her heart.

"I too will turn, for I discern a voice

Which whispers me that I am far from home;

Bids me repent, and led by holier choice

Back to a Father's open bosom come."

In relation also to the best of his two plays, *Violenzia*, which contains many a fine touch of natural emotion, Mr. Hutton illustrates another of the points in his friend's character.

"Of the profound, and perhaps exaggerated respect which Mr. Roscoe cherished for strict constitutional forms, as the signs of habitual self control in a political society, there is a curious example in his tragedy of *Violenzia*. Almost all his friends joked him about the trial scene,

in which the king, who would have been most fitly, as well as most justly, crushed at once as a monster of guilt, is put on his trial, and pronounced by the judges beyond their jurisdiction. Not till then will Ethel consent to take it on his own responsibility solemnly to avenge the hideous crime which had wrecked his own life. No doubt the purpose of the dramatist was to bring out very strongly the scrupulous self-distrust which makes Ethel's 'tardy and diffident spirit' fear lest personal revenge should enter into his motives. The author was responsible, as he says, for the *dénouement* 'as a poet only,' not as a moralist. But there was something more than this, I believe, in the tenacity with which Mr. Roscoe clung to this turn in the plot. He had so deep-rooted a reverence for due forms and conventions as the bulwarks of political and social order, that though one of his friends remarked on the unsatisfactoriness of a result which insured to the king 'his costs,' and all, I think, regarded this extreme legality as a great blot on the play, he never wavered in his adherence to it.

"And the same characteristic came out in many other ways. He not only disliked but despised any conventionalism which seemed to represent false ideas, and was often extremely bold in setting it at defiance. But I think he disliked still more any thing spasmodic that indicated a want of self-regulating power. 'What do you mean,' he once wrote to his sister, 'by raving about the shackles of society in that Carlylian fashion? We're too methodical, are we? What would you have us do? Wear our boots on our heads, or sleep in coal-scuttles? Eat our dinner off wheelbarrows, or always use superlatives? Should we then be 'Realities in the age of Shams?'"

Thoroughly real himself, Mr. Roscoe attacked affectation in all forms, and not with least relish when it took the form of scorn for the accepted usages of life. Of all shams there was none that seemed to anger apart from the living truth of individual ex-him more than the sham of eccentricity, pression. The *Essays* gathered from the *National* and other *Reviews* which occupy the second volume of the *Remains* abound in genuine expression of a mind that labored unobtrusively to penetrate to the essential truth of what it studied. Even where his decision as a critic is most open to exception, he sets wholesome independent thought before his readers, and excites them to the exercise of their own faculties. A body of consistent reasoning and feeling may be said even to bind his essays upon modern poets into an instructive study of their art.

## INAUGURAL ADDRESS

Delivered before the University of Edinburgh, 16th April, 1860, by the Rt. Hon. W. E. Gladstone, D.C.L., LL.D., Rector of the University of Edinburgh, and M.P. for the University of Oxford.

*Principal, Professors, and Students of the University of Edinburgh.*

I cannot estimate lightly the occasion on which I meet you, especially as it regards the younger and the larger part of my academical audience. The franchise which you have exercised in my favor is itself of a nature to draw attention; for the legislature of our own day has, by a new deliberative act invested you, the youngest members of the university, with a definite and not inconsiderable influence in the formation of that court, which is to exercise, upon appeal, the highest control over its proceedings. This is a measure which would hardly have been adopted in any other land than our own. Yet it is also one, in the best sense, agreeable to the spirit of our country and of its institutions; for we think it eminently British to admit the voice of the governed in the choice of governors—to seek, through diversity of elements, for harmony and unity of result, and to train men for the discharge of manly duties by letting them begin their exercise betimes.

You have chosen, gentlemen, as your own representative in the University Court, one widely enough separated from you in the scale of years; one to whom much of that is past, which to you is as yet future. It is fitting, then, that he should speak to you on such an occasion as that which unites us together—namely, the work of the university, as a great organ of preparation for after life; and that, in treating of what constitutes the great bond between us, he should desire and endeavor to assist in arming you, as far as he may, for the efforts and trials of your career.

Subject to certain cycles of partial revolution, it is true that, as in the material so in the moral world, every generation of man is a laborer for that which succeeds it, and makes an addition to that great sum-total of achieved results, which may, in commercial phrase, be called the capital of the race. Of all the conditions of existence in which man differs from the brutes, there is not one of greater moment than this, that each one of them commences life as if he were the first of a species, whereas man inherits largely from those who have gone before. How largely, none of us can say; but my belief is that, as years gather more and more upon you, you will estimate more and more highly your debt to preceding ages. If, on the one hand, that debt is capable of being exagger-

ated or misapprehended—if arguments are sometimes strangely used which would imply that, because they have done much, we ought to do nothing more; yet on the other hand, it is no less true that the obligation is one so vast and manifold that it can never as a whole be adequately measured. It is not only in possessions, available for use, enjoyment, and security; it is not only in language, laws, institutions, arts, religion; it is not only in what we have, but in what we are. For as character is formed by the action and reaction of the human being and the circumstances in which he lives, it follows that, as those circumstances vary, he alters too, and he transmits a modified—it ought to be also an enlarged and expanding—nature onwards in his turn to his posterity, under that mysterious law which establishes between every generation and its predecessors a moral as well as a physical association.

In what degree this process is marred, on the one hand, by the perversity and by the infirmity of man, or restored and extended, on the other, by the remedial provisions of the Divine mercy, this is not the place to inquire. The progress of mankind is upon the whole a chequered and an intercepted progress; and even where it is full formed, still, just as in the individual, youth has charms, that maturity under an inexorable law must lose, so the earlier ages of the world will ever continue to delight and instruct us by beauties that are exclusively or peculiarly their own. Again it would seem as though this progress (and here is a chastening and a humbling thought) were a progress of mankind, and not of the individual man; for it seems to be quite clear that whatever be the comparative greatness of the race now and in its infant or early stages, what may be called the normal specimens, so far as they have been made known to us, either through external form or through the works of the intellect, have tended rather to dwindle—or at least to diminish, than to grow in the highest elements of greatness.

But the exceptions at which these remarks have glanced, neither destroy nor materially weaken the profound moment of the broad and universal canon, that every generation of men, as they traverse the vale of life, are bound to accumulate, and in divers manners do accumulate, new treasures for the race, and leave the world richer on their departure, for the advantage of their descendants, than, on their entrance, they themselves had found it. Of the mental portion of this treasure no small part is stored—and of the continuous work I have described no small part is performed—by universities; which have been, I venture to say, entitled to rank



among the greater lights and glories of Christendom.

It is, I believe, a fact, and if so, it is a fact highly instructive and suggestive, that the university, as such, is a Christian institution. The Greeks, indeed, had the very largest ideas upon the training of man, and produced specimens of our kind with gifts that have never been surpassed. But the nature of man, such as they knew it, was scarcely at all developed; nay, it was maimed, in its supreme capacity—in its relations towards God. Hence, as in the visions of the prophet, so upon the roll of history, the imposing fabrics of ancient civilization never have endured. Greece has bequeathed to us her ever-living tongue and the immortal productions of her intellect. Rome made ready for Christendom the elements of polity and law; but the brilliant assemblage of endowments, which constitutes civilization, having no root in itself, could not brook the shocks of time and vicissitude; it came and it went; it was seen and it was gone:—

*"Hunc tantum teris ostendent fata; neque ultra esse sinent."*

We now watch, gentlemen, with a trembling hope, the course of that later and Christian civilization which arose out of the ashes of the old heathen world, and ask ourselves whether, like the Gospel itself, so that which the Gospel has wrought beyond itself in the manners, arts, laws, and institutions of men, is in such manner and degree salted with perpetual life, that the gates of hell shall not prevail against it? Will the civilization, which was springing upwards from the days of Charlemagne, and which now, over the face of Europe and America, seems to present to us in bewildering conflict the mingled signs of decrepitude and of vigor, perish like its older types, and, like them, be known thereafter only in its fragments; or does it bear a charmed life, and will it give shade from the heat and shelter from the storm to all generations of men?

In any answer to such a question, it would perhaps be easier to say what would not, than what would, be involved. But some things we may observe, which may be among the materials of a reply. The arts of war are now so allied with those of peace, that barbarism, once so terrible, is reduced to physical impotence; and what civilized man has had the wit to create, he has also the strength to defend. Thus one grand destructive agency is paralyzed. Time, indeed, is the great destroyer; but his power, too, is greatly neutralized by printing, by commerce which lays the foundations of friendship among nations, by the ease of communication which binds men together, by that dif-

fusion of intelligence which multiplies the natural guardians of civilization. These are perhaps not merely isolated phenomena. Perhaps they are but witnesses, and but a few among many witnesses, to the vast change which has been wrought, since the advent of our Lord, in the state of man. Perhaps they re-echo to us the truth that, apart from sound and sure relations to its Maker, the fitful efforts of mankind must needs be worsted in the conflict with chance and change; but that, when by the dispensation of Christianity the order of our moral nature was restored, when the rightful king had once more taken his place upon his throne, then, indeed, civilization might come to have a meaning and a vitality such as had before been denied it. Then, at length, it had obtained the key to all the mysteries of the nature of man, to all the anomalies of its condition. Then it had obtained the ground plan of that nature in all its fulness, which before had been known only in remnants or in fragments; fragments of which, even as now in the toppling remains of some ancient church or castle, the true grandeur and the ethereal beauty were even the more conspicuous because of the surrounding ruins. But fragments still, and fragments only, until, by the bringing of life and immortality to light, the parts of our nature were reunited, its harmony was re-established, our life, heretofore a riddle unsolved, was at length read as a discipline, and so obtained its just interpretation. All that had before seemed idle conflict, wasted energy, barren effort, was seen to be but the preparation for a glorious future; and death itself, instead of extinguishing the last hopes of man, became the means and the pledge of his perfection.

It was surely meet that a religion aiming at so much on our behalf should, in its historical development, provide an apparatus of subsidiary means for the attainment of its noble end far beyond what man in earlier days had dreamed of. To some of the particular organs formed in this apparatus for carrying man upwards and onwards to the source of his being, I have already adverted. Read in the light of these ideas the appearance of the university among the great institutions of Christian civilization is a phenomenon of no common interest. Let us see whether, itself among the historical results of Christianity, it does not vindicate its origin, and repay, so to speak, the debt of its birth, by the service that it renders to the great work of human cultivation.

I do not enter, gentlemen, into the question from what source the university etymologically derives its name. At the very least, it is a name most aptly symbolizing the pur-

pose for which the thing itself exists. For the work of the university as such covers the whole field of knowledge, human and divine; the whole field of our nature in all its powers; the whole field of time, in binding together successive generations as they pass in the prosecution of their common destiny; aiding each to sow its proper seed and to reap its proper harvest from what has been sown before; storing up into its own treasure house the spoils of every new venture in the domain of mental enterprise, and ever binding the present to pay over to the future an acknowledgement at least of the debt which for itself it owes the past. If the work of improvement in human society under Christian influences be a continuous and progressive work, then we can well conceive why the king's daughter, foreshadowed in Holy Writ, has counted the university among her handmaids. If, apart from what may be the counsels of Providence as to ultimate success, it lay essentially in the nature of Christianity that it should aim at nothing less than the entire regeneration of human nature and society, such a conception as that of the university was surely her appropriate ally. Think as we will upon the movement of man's life and the course of his destiny, there is a fit association, and a noble and lofty harmony, between the greatest gift of the Almighty to our race, on the one hand, and the subordinate but momentous ministries of those chief institutions of learning and education, the business of one among which has gathered us to-day.

The idea of the university, as we find it historically presented to us in the middle age, was to methodize, perpetuate, and apply all knowledge which existed, and to adopt and take up into itself every new branch as it came successively into existence. These various kinds of knowledge were applied for the various uses of life, such as the time apprehended them. But the great truth was always held, and always kept in the centre of the system, that man himself is the crowning wonder of creation; that the study of his nature is the noblest study that the world affords; and that, to his advancement and improvement, all undertakings, all professions, all arts, all knowledge, all institutions are subordinated as means and instruments to their end.

The old and established principle was that the university had its base in the faculty of arts; *Universitas fundata est in artibus*. It was not meant by this maxim that the faculty of arts was to have precedence over all other faculties, for this honor was naturally and justly accorded to theology; both, we may suppose, because of the dignity of its subject-matter, which well may place it at

the head of all human knowledge, and because it was, so to speak, in possession of the ground, and in the exercise of very powerful influence, at the period when the less organized institutions for teaching began to develop themselves into their final form of universities. But the university was founded in the principle of universal culture; and the name Arts was intended to embrace every description of knowledge that, rising above mere handicraft, could contribute to train the mind and faculties of man. To say, then, that the university was founded in arts, was to assert the universality of its work. The assertion was not less true, nor less far-sighted, because those who first made it may not have been conscious of its comprehending more than the studies of the *trivium* and the *quadrivium*, which included grammar, rhetoric, logic, arithmetic, music, geometry, and astronomy. This catalogue is indeed a brief one, as compared with the countless branches of modern study; yet within its narrow bounds it contains in principle, at the least, the philosophy of speech, the philosophy of the mind, the mathematical sciences, pure and mixed, and the fine arts. It is both more easy and more rational, all circumstances taken into view, to admire the vastness of the conception of the university, than to wonder that it was at first but partially unfolded and applied.

The sincerity, the sagacity, the energy of purpose, with which the old universities were designed and organized may be discerned, as in other ways, so by the progressive expansion of their studies. The Roman law, after remaining long almost forgotten, became known anew to Europe; and, as it grew to be a study, the universities provided for it with their faculty of laws; and with those degrees, principal and professors, which call this day for my grateful appreciation. Again, when the final triumph of barbarism at Constantinople compelled Greek learning to seek a home in the west, provision began to be made forthwith in universities for its reception. I think my distinguished brother, if I may presume so to call him (Professor Mansell), could tell us that one of the first of those foundations was made in the very college at Oxford which he himself adorns. And the study, of which Greek learning is the main and most fruitful as well as the most arduous part, made its way under the well-deserved name of humanity, to the very head of the faculty of arts. When in all physical science man, guided in no small degree by our own illustrious Bacon, became content (in Bacon's language) to acknowledge himself only the servant and interpreter of Nature, and to walk in the paths of patient observation, the ground was

laid first for that faculty of medicine, which has attained in the university of Edinburgh to a distinction destined, I hope, to be as long-lived as it is without doubt extraordinary. We can hardly expect that human institutions should, without limit of time, retain the flexible and elastic tissues of their youth; and universities in particular, as they have grown old and great, have come to interlace at many points with the interests and concerns of that outer world which has but little sympathy with their proper work: or they might have displayed at this day an organization as complete, relatively to the present state of knowledge and inquiry, as was that which they possessed some centuries ago.

The older history of the universities of Europe not only presents many features of the utmost interest, but upon the whole inspires satisfaction and challenges praise from the impartial observer.

I might detain you long, gentlemen, upon the various kinds of good they did, and I might search long without discovering any characteristic evils to set down against it. What the castle was to the feudal baron, what the guild was to the infant middle-class, they were to knowledge and to mental freedom; nor was it only that from them local culture received local shelter, and enjoyed through them an immunity from the assaults of barbarism in its vicinity: they established, so to speak, a telegraph for the mind; and all the elements of intellectual culture scattered throughout Europe were brought by them into near communion. Without a visible head, or a coercive law, or a perilous tendency to aggression, they did for the mind of man what the unity of the Roman Church aimed at doing for his soul. They did it by the strong sympathy of an inward life, and by a common interest and impulse, almost from their nature incapable of being directed to perverse or dangerous ends. Indeed, it was not in their nature to supply the materials of any combination formidable to other social powers acting each in its proper sphere, for they were on every side watched by jealous interests, and kept at once in check and in activity by competition. The monasteries for the Church, and the legal and medical professions with their special establishments of education, as they were matured in after times, prevented an undue ascendancy; while in these seats alone there was supplied that good preservative against excess and disorder, that human knowledge was in them regarded as a whole, and its various branches had, from their very neighborhood, better definitions of their proper provinces, and of their mutual relations. In whatever light

we view them, there was a completeness in the idea and work of universities, in proportion as their proper development was attained, which may well excite our wonder. They aimed alike, as we have seen, at the preservation of all old learning, and at the appropriation of all new. They bound themselves to prosecute alike those studies which fit men for the professions and the daily needs of life, and those which terminate upon man himself, whether by the investigation of truth or by the pursuit of refinement. They bore, and indeed they still bear, a character at once conservative and progressive. If not uniformly, yet in general, their influence tended to mitigate extreme opinions: the papal power, for example, knew no more formidable curb than the great university of Paris, and in England it was the special privilege of Oxford to rear up many centuries ago very eminent men of the class who have been well described by a German writer as reformers before the Reformation. I speak now of men of action; but in both of the universities I have named—and they are, I think, the two placed by Huber at the head of all the northern universities—there were also reared many men of the first order in power of thought, who discussed even the highest subjects with a freedom as well as a force much beyond what has been tolerated in the Latin church since the alarm and shock of the Reformation. Of all these, the best-known name to modern ears is Abelard; for it is associated with a romantic tale of passion, which some, and even some famous, writers have not thought it beneath them to degrade. But quite apart from the profound and sad interest, and the warning lessons of his history, he was a man that gave to the human mind one of those enduring impulses whose effects remain long after their source has been forgotten, and influence the course of thought, and through thought, of action, after many generations.

Universities were, in truth, a great mediating power between the high and the low, between the old and the new, between speculation and action, between authority and freedom. Of these last words, in their application to the political sphere, modern history, and the experience of our own time, afford abundant exemplification. In countries which enjoy political liberty, the universities are usually firm supports of the established order of things; but in countries under absolute government they acquire a bias towards innovation. Some excess may be noted in these tendencies, but in the main they bear witness against greater and more pernicious excesses. To take instances—the university of Edinburgh did not very easily accommodate itself to the Revolution

of 1688; it was long in the eighteenth century before Cambridge returned Whig representatives to parliament; and I believe the very latest of the Jacobite risings and riots occurred in Oxford. On the other hand, in some continental countries it has been the practice during the present century, when the political horizon threatened, at once to close the universities as the probable centres of agitation,—a proceeding so strange, according to our ideas and experience, that the fact may sound hardly credible; and within the last few weeks we may all have seen notices in the public journals of movements in the university of Rome itself, adverse to the pontifical government.

It is in itself deeply interesting, and it should augment our thankfulness for the ample liberties we now enjoy, to trace them back to their cradle. At one time we find nobles; at another, country gentlemen; at another, burgesses, engaged in the struggle against arbitrary power; but nowhere, in the ancient history of this country, is more deeply engraven her unconquerable love of freedom than in the constitution and history of her universities. Each of them, as a brotherhood, bound together by the noble bond of learning, was a standing and living protest against the domination of mere wealth and force in all their forms; and they strengthened themselves for their conflict by the freedom of their arrangements, both of teaching and of discipline. As respects teaching, I neither define nor dispute the changes that the altered conditions of modern society may have required; but I think there is no doubt, that in proportion as we can give a just freedom to teaching by introducing into it the element of a wholesome competition, do we approach more closely to the primitive spirit and system of universities. As to discipline, we may read the aversion of our forefathers to all slavish formalism in the personal freedom which has been allowed to students—in that curious distribution of them into nations, which appears to have aimed at a system of self-government combined with pupilage—in the occasional dangers, sometimes for the moment serious enough, to the public peace, which occurred from time to time; and lastly, let me say, in those suffrages which have so long been enjoyed in Scotland, and which have been extended to you under the authority of Parliament. It is indeed a fashion with some to ridicule that method of disputation which was used for testing talents and acquirements. I demur to the propriety of the proceeding. It might be as just to ridicule the clumsiness of their weapons or their tools. These disputations were clumsy weapons; but the question after all is, how did

the men use them? Let us confess, the defect was more than made good by the zeal with which, in those times, learning was pursued; their true test is in the capacity and vigor which they gave to the mind, and this trial they can well abide.

The sketch which I have endeavored to give, though longer than I could wish, yet, touching as it does a subject of vast and varied interest, is, I admit, both slight and general, and would require much adaptation in detail to make it exactly suit each case. But it is essentially a picture of the past.

*"Jam nova progenies cœlo demittitur alto."*

The simple forms into which society was cast at the time when universities were equal to their work, have given place to a more extended and elaborate organization, with greatly multiplied wants; and the very same state of society which now makes immensely enlarged demands on its establishments of learning and education, has likewise reduced the means of supplying them; for those prizes of talent and energy, and those opportunities of attaining even to colossal fortune, with which the outer walks of life now abound, have bid down the modest emoluments which science and learning offer within the precincts of universities, have altered the prevailing tone of mind with respect to knowledge, and have disposed the overwhelming mass of those who seek for education, to seek it not for its own sake, but for the sake simply of its bearing on the professions and pursuits of life.

Amidst a warm glow of reverence, gratitude, and attachment, there is discontent with the existing Universities, and a sense that they do not perform all their work. Part of this discontent is exacting and unreasonable; another part of it is justified by a comparison of the means which all or some of them possess with their performances, and ought to be met and to be removed. But besides the two forms of discontent I have named, there is a third, which is neither irrational, like the first, nor yet remediable, like the second. There must always be, especially in the most luminous and the most energetic minds, a sense of deficiency which we may properly call discontent in regard to the shortcomings of universities when they are put to the test of measurement beside the abstract and lofty standard supplied by their conception, their aim, and their older history. The truth is, that that standard is one which it surpasses human wit to reach, especially in a period marked, as is this of ours, by a restless activity of the human spirit. For let us remember that it is the proper work of universities, could they but perform it, while they guard and cultivate



all ancient truth, to keep themselves in the foremost ranks of modern discovery, to harmonize continually the inherited with the acquired wealth of mankind, and to give a charter to the freedom of discussion, while they maintain the reasonable limits of the domain of tradition and of authority.

The question how far endowments for education are to be desired, is beset with peculiar difficulty. Where they are small and remote from public observation, they tend rapidly to torpor. They are admirable where they come in aid of a good-will already existing, but where the good-will does not exist beforehand, they are as likely to stifle as to stimulate its growth. They make a high cultivation accessible to the youth who desires it, and who could not otherwise attain his worthy and noble end; on the other hand, they remove the spur by which Providence neutralizes the indolence of man, and moves him to supply his wants. If the teacher, when unendowed, may be constrained to forego all high training for students, and to provide only for their lower and more immediate demands; on the other hand, the teacher, when endowed, and in so far as he is endowed, is deprived of the aid which personal interest and private necessities can lend to the sense of duty, and he may be tempted to neglect or to minister but feebly to the culture of his pupils, either in its higher or in its lower sense.

And it is never to be forgotten, that amidst all the kinds of exertion incident to our human state, there is none more arduous, none more exhausting, than the work of teaching worthily performed. Some men, indeed, possess in this department a princely gift, which operates like a charm upon the young, and they follow such an one as soldiers follow their leader when he waves the banner of their native land before their eyes. But such men are rare; they are not less rare than are great men in any other walk of life. Speaking generally, the work of teaching is, even when pursued with the whole heart, even when felt to be an absorbing work, but moderately successful; while he who teaches with half his heart does not really teach at all.

There are, however, considerations which tell on the other side. The solidity of establishments founded on old endowments supplies a basis on which there are gradually formed a mass of continuous traditions, always powerful and generally noble; and the very name of them, as it is handed on from generation to generation, becomes a watchword at once of affectionate remembrances and of lofty aspirations. They lay hold of the young by those properties which are the finest characteristics of youth; and in our happy country the boy, when he is enrolled

as a member of one of these institutions, feels that he is admitted to a share in a great inheritance, and instinctively burns to be worthy of the badge he has assumed.

Again, in a country which, like this, is both free and wealthy, all endowed institutions are open to the competition of the unendowed, and few establishments are so amply endowed as not to leave room for the operation on the teacher of those ordinary motives which prompt him to better his condition. This remark is eminently applicable to the universities in Scotland.

It is indeed alleged, and I think with truth, that the ancient universities of England, with their magnificent endowments, do not effect so much as they ought on behalf of either education or of learning; with the spirit of improvement which now rules in them, and with the powerful aid which the legislature has given for the more free and efficacious use of their property, I believe that they will both further enlarge their field and plough it more deeply. But when all has been done that we can reasonably hope, the results will still seem small when compared with those produced in other times and in other countries; they will still give rise to disappointment.

Let it not, on that account, be concluded that it would be well to strip these great and ancient foundations of their trappings. The real merits, the real performances of universities, cannot be fairly judged except by fairly measuring the strength of the competing power, that of the outer world, in all its busy spheres. The fact that a hundred pounds will not bring as much learning in England, or even in Scotland, as in Germany, is no more conclusive of this case than the fact that neither will the same sum buy as many eggs; not because eggs are more scarce, but because money is more abundant.

It may be, though I will not presume to assert positively it is, that the endowments of learning in our own country do but redress, and that partially, the relative disadvantage at which, but for them, learning itself must have been placed by the increased attractions and multiplied openings which the exterior spheres of modern life supply. This, however, we all must feel, that now is the time when it befits every teacher and every student connected with all these great and venerable institutions, to bestir himself, and to refute, at least in his own person, the charge that endowment gravitates towards torpor as its natural consummation, if indeed we desire that in a critical though not an unkindly age the universities should still enjoy that intelligent respect which has been paid them by so many generations.

I have been assuming all along that all

universities are united by a paramount bond of common interest, and I have therefore discussed them at large. If now we contract our view to the universities of Scotland—if again we bring it yet nearer home, and look at Edinburgh alone, we have the consolation of thinking that envy herself can scarcely charge either the whole of them, or this one in particular, with an abuse of wealth.

In the history of the University of Edinburgh, we may clearly trace the national character of Scotland; we find there all that hardy energy, that gift of extracting much from little, of husbanding every available provision, and of supplying the defects of external appliances and means from within by the augmented effort and courage of man, that power to make an ungenial climate smile, and a hungry soil teem with all the bounties of Providence, which have given to Scotland a place and a name among men so far beyond what was due to her geographical extent or to her natural resources. The progress of this University during the last century—I strive to speak impartially—is wonderful; from the days of Carstairs, Pitcairn, Monro, and Sibbald, at its beginning, to those of Brown and Stewart, of Robertson and Blair, of Cullen, the second Monro, of Black, of Playfair, of Robison, of Sir William Hamilton, and many others both before and since its close.

It would be most unjust, in any review of the fortunes of this University, not to notice that great peculiarity in its condition—its subjection to the local municipal authority. I speak, gentlemen, of what history tells. I have stated that it is the business of universities to give a charter to freedom of discussion; and I am sure you will allow me to state, without prejudice, the impression that a perusal of the ancient history of Edinburgh makes on my mind. In lieu of sovereigns, and great nobles and prelates, for patrons, visitors, chancellors, and the like, the University of Edinburgh, as a general rule, could look no further and no higher than to the Council of the “good town” itself. A relation, originally intended for a great secondary school, survived that stage of the career of the institution, and continued to influence its affairs, when it was, to all intents and purposes, a University; and I must say that the history of this relation appears to be highly honorable to all parties concerned. On the side of the teaching body we commonly find deference and trust. On the side of the superintending corporation, in generations gone by—for the present is not within the sphere of my discussion—we find patronage effectively and intelligently exercised, and the most assiduous and friendly care bestowed in improving and enlarging the organization. I speak with the

freedom of historical inquiry, nay, with a chartered freedom of discussion before an academic audience: modern times do not fall within my province: but I must declare, in looking to the past, that it will indeed be easier for the Town Council of our own day, in the discharge of the large and important share of governing duties that are still lodged in its hands, to fall below, than to rise above, the level of those who preceded it in the critical times preceding and following the Legislative Union.

And now, my younger friends, you to whom I owe the distinction of the office which enables and requires me to address you, if I have dwelt thus at length upon the character and scope of universities, and their place in the scheme of Christian civilization, it is in order that, setting before you the dignity that belongs to them, and that is reflected from them on their members, and the great opportunities which they offer, both of advancement and of improvement, I might chiefly suggest and impress by facts, which may be more eloquent than precepts, the responsibilities that are charged upon you by the enjoyment of these gifts and blessings.

Much, however, might be said to you on the acquisition of the knowledge which will be directly serviceable to you in your several professions. Much on the immense value of that kind of training, in which the subjects learned have for their chief aim not to inure the hand (so to speak) to the use of its tools in some particular art, but to operate on the mind itself, and, by making it flexible, manifold, and strong, to endow it with a general aptitude for the duties and exigencies of life. Much, lastly, on the frame of mind in which you should pursue your work.

Of these three branches, the topics belonging to the first are the most obvious and simple, for it requires no argument to persuade the workman, that he must be duly furnished with his tools, and must know how to handle them.

The reasons are less directly palpable which have made it the habit of our country to spend, where means permit many precious years upon studies void in a great degree of immediate bearing upon the intended occupations of our after life. There may, however, be the means of showing first, that even the direct uses of the studies which you include under the general designation of humanity, are more considerable, when they are collected into one view, than might have been supposed; and, secondly, that the most distinguished professional men bear witness, with an overwhelming authority, in favor of a course of education in which to train the mind shall be the first object, and to stock it, the second.

Man is to be trained chiefly by studying

and by knowing man; and we are prepared for knowing man in life by learning him first in books, much as we are taught to draw from drawings before we draw from nature. But if man is to be studied in books, he will best be studied in such books as present him to us in the largest, strongest, simplest, in a word, the most typical forms. These forms are principally found among the ancients.

Nor can the study of the ancients be dissociated from the study of their languages. There is a profound relation between thought and the investiture which it chooses for itself; and it is, as a general rule, most true, that we cannot know men or nations unless we know their tongue.

Diversity of language was, like labor, a temporal penalty inflicted on our race for sin; but being, like labor, originally penal, like labor it becomes, by the ordinance of God, a fertile source of blessing to those who use it aright. It is the instrument of thought, but it is not a blind or dead instrument: it is like the works in metal that Dædalus and Vulcan were fabled to produce; and even as the limping deity was supported in his walk by his nymphs of so-called brass, in like manner language re-acts upon and bears up the thoughts from which it springs, and comes to take rank among the most effective powers for the discipline of the mind.

But more important than the quest of professional knowledge, more vital than the most effective intellectual training, is the remaining question of the temper and aim with which the youth prosecutes his work.

It is my privilege to be the first who has ever thus addressed you in the capacity of rector. But without doubt, your ears have caught the echo of those affectionate and weighty counsels, which the most eminent men of the age have not thought it beneath them to address to the students of a sister Scottish university. Let me remind you how one of European fame, who is now your and my academical superior, how the great jurist, orator, philosopher, and legislator, who is our chancellor, how Lord Brougham besought the youth of Glasgow, as I in his words would more feebly, but not less earnestly, pray you, "to believe how incomparably the present season is verily and indeed the most precious of your whole lives," and how "every hour you squander here will," in other days, "rise up against you, and be paid for by years of bitter but unavailing regrets." Let me recall to you how another lord rector of Glasgow, whose name is cherished in every cottage of his country, and whose strong sagacity, vast range of experience, and energy of will were not one whit more eminent than the tenderness of his conscience, and his ever wakeful and wearing sense of public duty—let me recall to you

how Sir Robert Peel, choosing from his quiver with a congenial forethought that shaft which was most likely to strike home, averred before the same academic audience what may as safely be declared to you, that "there is a presumption, amounting almost to certainty, that if any one of you will determine to be eminent in whatever profession you may choose, and will act with unvarying steadiness in pursuance of that determination, you will, if health and strength be given to you, infallibly succeed." The mountain tops of Scotland behold on every side of them the witness, and many a one of what were once her morasses and her moorlands, now blossoming as the rose, carries on its face the proof, that it is in man and not in his circumstances that the secret of his destiny resides. For most of you that destiny will take its final bent towards evil or towards good, not from the information you imbibed, but from the habits of mind, thought, and life that you shall acquire, during your academical career. Could you with the bodily eye watch the moments of it as they fly, you would see them all pass by you, as the bee that has rifled the heather bears its honey through the air, charged with the promise, or it may be with the menace, of the future. In many things it is wise to believe before experience—until you shall know, and in order that you may know; and believe me when I tell you that the thrift of time now will repay you in after life with an usury of profit beyond your most sanguine dreams, and that the waste of it will make you dwindle, alike in intellectual and in moral stature, beyond your darkest reckonings.

I am Scotchman enough to know that among you there are always many who are already, even in their tender years, fighting with a mature and manful courage, the battle of life. When they feel themselves lonely amidst the crowd; when they are for a moment disheartened by that difficulty, which is the rude and rocking cradle of every kind of excellence; when they are conscious of the pinch of poverty and self-denial, let them be conscious, too, that a sleepless eye is watching them from above, that their honest efforts are assisted, their humble prayers are heard, and all things are working together for their good. Is not this the true life of faith, which walks by your side from your rising in the morning to your lying down at night—which lights up for you the cheerless world, and transfigures all that you encounter, whatever be its outward form, with hues brought down from heaven?

These considerations are applicable to all of you. You are all in training here for educated life, for the higher forms of mental experience, for circles limited perhaps, but

yet circles of social influence and leadership. Some of you may be chosen to greater distinctions and heavier trials, and may enter into that class of which each member, while he lives, is envied or admired:—

“And when he dies he leaves a lofty name,  
A light, a landmark, on the cliffs of fame.”

And, gentlemen, the hope of an enduring fame is without doubt a powerful incentive to virtuous action; and you may suffer it to float before you as a vision of refreshment, second always, and second with long interval, to your conscience and the will of God. For an enduring fame is one stamped by the judgment of the future; of that future which dispels illusions, and smashes idols into dust. Little of what is criminal, little of what is idle, can endure even the first touch of the ordeal; it seems as though this purging power following at the heels of man and trying his work even here and now, were a witness and a harbinger of the great final account.

So then the thirst of an enduring fame is near akin to the love of true excellence. But the fame of the moment is a dangerous possession and a bastard motive; and he who does his acts in order that the echo of them may come back as a soft music to his ears, plays false to his noble destiny as a Christian man, places himself in continual danger of dallying with wrong, and taints even his virtuous actions at their source. Not the sublime words alone of the Son of God and his apostles, but heathenism too, even while its vision is limited to the passing scene, testifies with an hundred tongues that the passing scene itself presents to us virtue as an object, and a moral law, graven deeply in our whole nature, as a guide. But now, when the screens that so bounded human vision have been removed, it were sad indeed, and not more sad than shameful, if that being should be content to live for the opinion of the moment, who has immortality for his inheritance. He that never dies, can he not afford to wait patiently awhile? And can he not let Faith, which interprets the present, also guarantee the future? Nor are there any two habits of mind more distinct than that which chooses success for its aim and covets after popularity, and that, on the other hand, which values and defers to the judgments of our fellow-men as helps in the attainment of truth.

But I would not confound with the sordid worship of popularity in after life, the graceful and instinctive love of praise in the uncritical period of youth. On the contrary, I say, avail yourselves of that stimulus to good deeds, and when it proceeds from worthy

sources and lights upon worthy conduct, yield yourselves to the warm satisfaction it inspires; but yet, even while young, and even amidst the glow of that delight, keep a vigilant eye upon yourselves, refer the honor to Him from whom all honor comes, and ever be inwardly ashamed for not being worthier of his gifts.

But, gentlemen, if you let yourselves enjoy the praise of your teachers, let me beseech you to repay their care, and to help their arduous work, by entering into it with them; and by showing that you meet their exertions neither with a churlish mistrust nor with a passive indifference, but with free and ready gratitude. Rely upon it, they require your sympathy; and they require it more in proportion as they are worthy of their work. The faithful and able teacher, says an old adage, is *in loco parentis*. His charge certainly resembles the mother's care in this: if he be devoted to his task, you can measure neither the cost to him of the efforts which he makes, nor the debt of gratitude you owe him. The great poet of Italy—the profound and lofty Dante—had had for an instructor one\* whom for a miserable vice, his poem places in the regions of the damned; and yet this lord of song—this prophet of all the knowledge of his time—this master of every gift that can adorn the human mind—when in those dreary regions he sees the known image of his tutor, avows in language of a magnificence all his own, that he cannot, even now, withhold his sympathy and sorrow from his unhappy teacher, for he recollects how, in the upper world, with a father's tender care, that teacher had pointed to him the way by which man becomes immortal.

Gentlemen, I have detained you long. Perhaps I have not had time to be brief; certainly I could have wished for much larger opportunities of maturing and verifying what I have addressed to you upon subjects which have always possessed a hold on my heart, and have long had public and palpable claims on my attention. Such as I have, I give. And now, finally, in bidding you farewell, let me invoke every blessing upon your venerable University in its new career; upon the youth by whom its halls are gladdened, and upon the distinguished head and able teachers by whom its places of authority are adorned.

\* Brunetto Latini.

Se fosse pieno tutto 'l mio dimando,  
Risposi io lui, vio non sareste ancora  
Dell' umana natura posto in bando;  
Che in la mente m' è sita, ed or m' accora  
La cara e buona imagine paterna  
Di voi nel mondo, quando ad ora ad ora  
Mi 'nsegnavate come l' uom s' eterna.

*Inferno*, xv. 79.



From The Constitutional Press Magazine.

THE following stanzas by the late Thomas Campbell—never included in his published works—are obviously the first expanded sketch of what he afterwards condensed into that most noble sea-song, "The Battle of the Baltic." The editor is indebted to the Rev. Greville J. Chester for permission to print this very interesting poem.

FIRST EDITION OF "THE BATTLE OF COPENHAGEN," MS.

OF Nelson and the North

Sing the day!

When, their haughty powers to vex,  
He engaged the Danish decks,  
And with twenty floating wrecks  
Crowned the fray.

All bright in April's sun

Shone the day!

When a British fleet came down  
Through the Islands of the Crown,  
And by Copenhagen town  
Took their way.

In arms the Danish shore

Proudly shone;

By each gun the lighted brand,  
In a bold, determined hand,  
And the prince of all the land  
Led them on.

For Denmark here had drawn

All her might!

From her battle-ships so vast  
She had hewn away her mast,  
And at anchor to the last,  
Bade them fight.

Another noble fleet

Of their line

Rode out; but these were naught  
To the batteries they brought  
Like leviathans afloat  
On the brine.

It was ten of Sunday morn

By the chime:

As they drifted on their path,  
There was silence deep as death,  
And the boldest held his breath  
For a time.

Ere a first and fatal sound

Shook the flood;

Each Dane looked out that day,  
Like the red wolf on his prey,  
And they swore their flags to sway  
O'er our blood.

Not such a mind possessed

England's tar;

'Twas the love of noble game  
Set his oaken heart on flame,  
For to him 'twas all the same,  
Sport or war.

All hands and eyes on watch

As they keep,

By each motion light as wings,  
By each step that haughty springs,  
You might know them for the kings  
Of the deep.

'Twas the Edgar first that smote

Denmark's line;

As her flag the foremost soared,  
Murray stamp his foot on board,  
And a hundred cannons roared  
At the sign.

Three cheers of all the fleet

Sung huzza;

Then from centre, rear, and van,  
Every captain, every man,  
With a lion's heart began  
To the fray.

Oh, dark grew soon the heavens,

For each gun,

From its adamantine lips,  
Spread a death-shade o'er the ships,  
Like the hurricane eclipse  
Of the sun.

Three hours the raging fire

Did not slack,

But at length the signals drear  
Of distress and wreck appear,  
And the Dane a feeble cheer  
Sent us back.

The sound decayed, their shots

Slowly boom;

It ceased, and all is wail,  
As they strike the shattered sail,  
Or in conflagration pale,  
Light the gloom.

O Death! it was a sight

Filled our eyes;

But we rescued many a crew  
From the wave of scarlet hue,  
Ere the cross of England flew  
O'er her prize.

Why ceased not here the strife,

O ye brave!

Why bleeds Old England's band  
By the fire of Danish land,  
That smote the very hand  
Stretched to save?

But the Britons sent to warn

Denmark's town,

"Proud foes let vengeance sleep,  
If another chain shot sweep,  
All your navy in the deep  
Shall go down.

"Then peace instead of war

Let us bring;

If you yield your conquered fleet,  
With the crews, at England's feet,  
And make submission meet,  
To our king."

The Dane returned, a truce

Glad to bring;

"He would yield his conquered fleet,  
With the crews, at England's feet,  
And make submission meet  
To our king."

Then death withdrew his shades

From the day,

And the sun looked smiling bright  
On a wide and woful sight,  
Where the fires of funeral light  
Died away.

Yet all amidst her wrecks  
And her gore,  
Proud Denmark blessed our chief,  
That he gave her wounds relief,  
And the sounds of joy and grief  
Filled her shore.

Around, outlandish cries  
Loudly broke;  
But a nobler note was rung,  
When the British, old and young,  
To their bands of music sung  
"Hearts of oak."

Cheer, cheer, from park and tower,  
London town!  
When the king shall ride in state  
From St. James' royal gate,  
And to all his peers relate  
Our renown.

The bells shall ring, the day  
Shall not close,  
But a blaze of cities bright  
Shall illuminate the night,  
And the wine cup shine in light  
As it flows.

Yet, yet amid the joy  
And uproar,  
Let us think of them that sleep  
Full many a fathom deep,  
By thy wild and stormy steep,  
Elsinore!

Brave hearts, to Britain's weal  
Once so true,  
Though death has quenched your flame,  
Yet immortal be your name,  
For ye died the death of fame  
With Riou.

Soft sigh the winds of heaven  
O'er your grave;  
While the billow mournful rolls,  
And the mermaid's song consoles,  
Sing glory to the souls  
Of the brave.

#### NIGHT.

Oh, the beautiful strange visions seen within the  
silent night!

Then when heavy eyelids weigh on heavy eyes  
that hate the light,

When the careworn spirit, resting from the pen-  
ance and the pain,

Sees in dreams long-vanished Edens rich with  
love and life again.

Then dark thoughts no more molest us: dull  
and leaden-hearted men,  
Cruel in their lust of riches, make not breath  
seem bitter then.

Doubt casts not its poisonous shadow. Slow de-  
spairs, that rattle deep,  
Pass away, as if forever, exiled from the land  
of sleep.

Then once more we see the faces that are laid  
beneath the mould;

Then we hear sweet-meaning voices—voices that  
we loved of old;

Then the stainless life returneth laughing through  
the merry hours,  
On the ancient paths of childhood, sown around  
with starry flowers.

Who would lose the dear illusion—who would  
wish to feel it less,  
Though it make the radiant morning thick with  
blight and barrenness?  
Let the weary waking hours, forlorn of hope,  
creep slowly on,  
So on slumber's couch we borrow joyaunce from  
the summers gone.

O Sleep! dear to all, then dearest when strong  
sorrow bows us down,  
Charming care with golden hours, and smoothing  
out the furrowed frown;  
Thou that blottest from existence half the fever  
and the fear—  
Come, kind minister of healing, come, for thou  
art needed here.

Come, as yesternight thou camest. I had deemed  
that nevermore,  
Save to grief, my darkened spirit should unlock  
its sealed door;  
For within my breast I shuddered, shadowing  
forth the things unseen,  
And the Past, save in its sorrow, seemed as it  
had never been.

For I thought on wasted life—I saw a future  
fearful hour,  
Dread misgivings, formless terrors, evil sights  
of evil power,  
When the clock ticks slow, the minutes linger in  
their sullen flight,  
And the ghastly day's oppression is but trebled  
in the night.

When no more the shattered senses round the  
throne of reason dwell,  
Thinking every sight a spectre, every sound a  
passing bell;  
When the mortal desolation falleth on the soul  
like rain,  
And the wild hell-phantoms dance and revel in  
the burning brain.

Now the months and years of old, far from the  
outer feud and strife,  
Lay before me like a picture breathing with the  
breath of life;

And I saw my early home, as when it was a  
home to me,  
In a happy land, and fairer than bright lands  
beyond the sea.

There it stood—the self-same village—even as  
in hours of old,  
When the stately sun descending dipped the daz-  
zling panes in gold;  
And methought for many an hour, yea many a  
peaceful day and night,  
All that space of earth was steeped in one de-  
licious fairy light.

And I marvelled not, though round me cluster-  
ing life and beauty grew  
In the paradisaal stillness visited by forms I knew;

Yet there were, beyond all others, features that  
I loved to trace—  
Ah! too truly I remember—for it was my  
mother's face.

'Twas no wonder that I knew thee, as thy kind  
eyes turned to mine,  
Happy in my happiness, while I was thinking  
not of thine;  
And I heard thy silver accents sweeter than all  
music flow—  
Ah me, but the lapse of summers changes many  
things below!

"Mother, we will dwell together evermore," I  
seemed to say,  
Far from hence life's wheels are whirling; scarce  
an echo comes this way.  
Here an uneventful rest shall fold us in a dream  
of peace,  
Here our love through silent seasons grow with  
infinite increase."

But I woke—as one who, coming from far lands  
beyond the wave,  
Finds not any face of welcome—all he loved are  
in the grave.  
Scarce the ancient house remaineth, bartered for  
a stranger's gold;—  
Foreign fires upon the hearth, whose very flame  
is deathly cold!

Surely, 'twas some evil angel woke me ere the  
dawn began—  
Fiend, who could have heart to break the slum-  
bers of a wretched man!  
Time enough grief's drooping banners once more  
to behold unfurled,  
When the warm imperial sunlight widens through  
a weeping world!

Breathing soon a finer sorrow, I, who had not  
wept for years,  
As I pondered on the vision felt my eyes grow  
dim with tears;  
And I know that never, never, while Time wings  
his weary flight,  
From my heart of hearts shall perish the remem-  
brance of that night.

God be thanked that thy sweet phantom swept  
across my dreary way,  
Lighting up thine own dear footprints lest thy  
child should turn astray.  
Now for me, my loving sisters, Hope and Mem-  
ory embrace,  
Each alike henceforward living in the sunshine  
of thy face.

Let me pass in some sweet vision of the seasons  
long gone by!  
Some stray touch of dreamy fancy haunt me  
slumbering ere I die!  
Kindred hands of welcome lead me to the country  
far away,  
Where the spirit never needeth interchange of  
Night and Day!

P. S. WORSLEY.

—*Blackwood's Magazine.*

## TOO LATE.

Hush! speak low—tread softly—  
Draw the sheet aside:  
Yes, she does look peaceful;  
With that smile she died.

Yet stern want and sorrow  
Even now you trace  
On the wan, worn features  
Of the still, white face.

Restless, helpless, hopeless,  
Was her bitter part;  
Now, how still the violets  
Lie upon her heart.

She who toiled and labored  
For her daily bread:  
See the velvet hangings  
Of this stately bed.

Yes, they did forgive her,  
Brought her home at last,  
Strove to cover over  
Their relentless past.

Ah, they would have given  
Wealth and name and pride,  
To see her looking happy  
Once before she died.

They strove hard to please her,  
But, when death is near,  
All, you know, is deadened—  
Hope and joy and fear.

And, besides, one sorrow—  
Deeper still, one pain—  
Was beyond them: healing  
Came to-day in vain.

If she had but lingered  
Just a few hours more;  
Or had this letter reached her  
Just one day before!

I can almost pity  
Even him to-day,  
Though he let this anguish  
Eat her heart away.

Yet she never blamed him,  
One day you shall know  
How this sorrow happened:  
It was long ago.

I have read his letter:  
Many a weary year  
For one word she hungered—  
There are thousands here!

If she could but hear it,  
Could but understand!  
See, I put the letter  
In her cold white hand.

Even these words, so longed for,  
Do not stir her rest.  
Well, I should not murmur,  
For God judges best.

She needs no more pity;  
But I mourn his fate,  
When he hears his letter  
Came a day too late.

—*All the Year Round.*

From The Constitutional Press Magazine.

# INFLUENCE OF EGYPTIAN ARCHEOLOGY ON BIBLE STUDIES.

BY REGINALD STUART POOLE.

I HAVE been asked "What is the good of hieroglyphics?" and found it hard to give an answer. The investigation of these primeval records of what men thought and did, two, three, and even four thousand years ago, has been in general pursued with little or no reference to what men now think and do. Learning and patience have been devoted to minute questions; while the grand human subjects, of which these are insignificant portions, have been neglected. Thus a pursuit rich in its promise has been confined to a few, and the many have not cared for it. Were it generally known what real good may be derived from this difficult study, what unveiling of the inner life of the oldest of settled nations, what clear recovery of traces of man's first true belief, what a new and independent commentary on the Bible, the learning of Egypt would not be almost as great a mystery as when the priests refused to tell the sacred name of Osiris.

I know that many are weary of the very mention of Egyptian or any other archaeology in relation to the Bible. They say, "We have read so many books and essays on this subject, arguing on matters prejudged, that we do not believe in your impartiality." I quite admit that on the religious side there has been reason enough to offend any clear-headed or honest inquirer. But I have found, and still find, quite as much written on the other side, which is as repugnant to all notions of judgment and fairness. To the end of time the majority on both sides will, intentionally or not, wrest arguments and reason on false grounds, but this does not justify any one in shutting his ears to a fair statement of a weighty question.

The first point on which I wish to touch is the evidence of a primeval revelation afforded by the Egyptian mythology. It is now admitted by every competent scholar that, inwoven with the tangled web of myths and superstitions which mainly compose the strange belief of Egypt, we trace ever and anon the golden thread of truth. Base as were many of the tenets among which the truth was thus preserved, it was never lost; and not only so, but it ever maintained its superiority. The whole moral teaching of the priests depended upon it. To it was due the majestic art of the nation. It alone had principles of vitality.

The Egyptians believed in life after death, in judgment according to man's deeds on earth, and in future rewards and punish-

ments. Their belief in these broad truths is quite certain; the more minute definition of them may be doubtful. It has not been determined how far the immortality of the soul was held; whether the ultimate state was supposed to be one of separate existence or of absorption or annihilation; whether the rewards or punishments were believed to be purgatorial or eternal. The judge of the dead was Osiris, the great foe of the power of evil. Every man was examined before him as to his deeds on earth. He had to reply to forty-two questions, each one relating to the commission of a particular sin. If acquitted, he became an Osiris, taking the name and form of the judge, and being admitted to the joys of the Egyptian Paradise, the Aähhoo, whence the Greeks derived their Elysian Fields. A woman also became an Osiris, taking the name of the judge, and not that of Isis his wife.

If I were to cite late and second-hand authority, I might much enlarge this account, and show a greater closeness of agreement with revelation. I prefer to confine myself to what can be learnt from the Egyptian Ritual and the early religious representations of the monuments. The Ritual was the sacred book of the Egyptians. Countless copies of parts and some of the whole, written on papyrus, have been found in Egypt, chiefly in the burial-grounds. It consists of prayers mainly to be said by the deceased in the separate state, and therefore to be learnt by him while on earth. Portions of it are known to be as old as two thousand years B.C., and there are copies of the whole written one thousand five hundred or one thousand four hundred years B.C. Much of it is still uninterpreted, but the general truths I have mentioned are admitted to be declared in it with great clearness.\*

This discovery bears with surprising force upon a controversy of the highest importance. The old idea that Moses based the law upon the Egyptian belief, has lately found many adherents in the German school. These have been so accustomed to repeat this old scandal that they have ceased to question its truth, and have allowed themselves to drift away into a very dangerous position. So long as we knew nothing of the Egyptian religion, except from the representations of the monuments and the incorrect statements of ancient writers, it was easy enough to assert, on the evidence of a few outward agreements, that the two systems were identical. Now, however, our fuller

\* The reader will find an interesting paper on the Ritual, by M. de Rougé, in the February number of the *Revue Archéologique* for the present year. I am not, however, prepared to accept his close definition of the principles of the Egyptian religion.



knowledge has enabled us to find the very groundwork of the Egyptian religion, and the result is this paradox for the Germans. They derive the law from a system altogether opposite to it. The law taught the doctrine of rewards and punishments during life, the Egyptian religion held out rewards and punishments after death. Yet the very people who maintain the Egyptian origin of the law, have alleged the absence in it of a clear mention of a future state, as proving that Moses was not acquainted with that great truth; which truth we now positively know to have been the primary doctrine of the Egyptian religion.

It may be remarked that the knowledge we now have of the current belief of the Egyptians clears up what was certainly a great difficulty. Formerly, we held that the learned among them had some dim idea of a future state, but we had not evidence to show that even they believed in it universally, or whether it was a religious doctrine, or merely the result of philosophic speculation. Now we know that the whole nation believed in life after death and future rewards and punishments; that these doctrines were the basis of the moral system of the priests; and that the architecture, the literature, and the very life of the Egyptians had more regard to the future, than to the present state. Each king occupied years, if not his whole reign, in making his tomb. So important was the work, that he generally began it at his accession, sometimes even before. All the ceremonies of burial, the embalming and preservation of the body, had reference to the after-life of the soul. If the tomb were rock-hewn, its walls were decorated with sculptures or paintings relating to the future state; representing the terrible judgment-scene, the happiness of the blessed, and the misery of the lost. So, too, with the subjects, though their tombs, in the earlier ages of the monarchy, bear representations referring to their occupations during life. The ancient Egyptian's card represented him as a dead man, "the Osiris"..... "justified,"\* and he never "left it" except on such occasions as the funerals of the bulls Apis. If a young Egyptian chose a scarabæus with a device to give to a friend, he would wish "a perfect life," or more distinctly, a happy resurrection, "May your name remain, and your being be renewed." Thus the idea of the future state and man's condition as depending upon his works done in this life, was always present to the whole nation, from the king, who superintended the making of his tomb, to the priestly sculptor and the common workman.

\* This term "justified," literally "truth-spoken" or "justice-spoken," is sometimes replaced by "a second time living."

In their very rejoicing it was not absent, even if the story of the mummy at the feast be not true. Hence it is quite clear, that the Israelites, living among the Egyptians, themselves Egyptians in every thing but race, must have known that there was a future state of rewards and punishments. The Mosaic law did not take this doctrine as a basis of teaching, but we nowhere find it denied. Like other points of patriarchal belief, it was retained by the people in general, and, if almost lost in the troublous and ignorant days of the Judges, it afterwards gained greater and greater hold on the belief of the nation, until it was clearly proclaimed under the new and more distinct revelation of the gospel.

The illustration of details of Biblical history which the Egyptian monuments afford, is a subject of great importance, from its bearing upon the accuracy of the Bible. It has been very much neglected, in consequence of the extravagant expectations of many, who, in the early days of Egyptian archæology, looked for an exact account of Israel in Egypt from the monuments. They never perceived, what is clear enough, though few are willing to admit it, that we have no consecutive chain of historical monuments stretching through many centuries. In the remotest past there is the group of tombs around the greatest pyramids of Memphis, which tell us, in their sculptures and inscriptions, of the life of the Egyptians of that time, about four thousand years ago. This group may extend over two centuries. Then there is a great blank, with here and there a doubtful and shifting stepping-stone in a dark stream of historical oblivion, until we reach the monuments of the Twelfth Dynasty, lasting for about a century and a half, from Abraham's time. Then there is another great chasm, still more obscure than the earlier one, and we come to the Eighteenth Dynasty, beginning about 1500 B.C. The second and more dense time of darkness is accounted for by the invasion and subjugation of Egypt by a foreign race, the Shepherds, and the paucity of its monuments confirms the statement of Manetho, the native historian, that this was a period of terrible intestine war. From the Eighteenth Dynasty the evidence is more connected, although often a hundred years or more is nearly a blank in the history. From this it follows, that if the Israelites were in Egypt in any of the times as to which we know nothing from the Egyptian monuments, we could expect no distinct account of their sojourn and exodus. If we take the ordinary reckoning in the margin of our Bibles—Ussher's Chronology—the sojourn would mainly fall before the Eighteenth Dynasty,

and the exodus early in that dynasty. If we take the reckoning of Hales, which many are disposed to consider the best Bible chronology, both sojourn and exodus would fall in the time before this dynasty. In either case we could scarcely expect any reference to the Israelites. But setting this aside, although Joseph's administration might have been recorded, the disasters of the exodus would have found no place in the annals of a nation that was especially averse to chronicling defeat. The kind of illustration we have a right to expect does not relate to the main facts of the history, but to such matters as the details of manners.

In these matters the accuracy of the Bible is strikingly shown. The Greek writers, some of whom, and especially Herodotus, were not inaccurate observers, have been cited to set right the Biblical account. In every case the monuments have proved that the sacred historian was correct, and the profane historian in error. The most interesting illustrations are, however, those which show a perfect knowledge of the country. These are quite as frequent in the Prophets as in the Pentateuch. Thus we read in Exodus, that when the Israelites saw Pharaoh in pursuit of them "they said unto Moses, because [there were] no graves in Egypt, hast thou taken us away to die in the wilderness." (XIV. 11.) The prophet Hosea declared of the fugitives of Ephraim, "Egypt shall gather them up, Memphis shall bury them." (IX. 6.) Egypt is, above all countries, a land of ancient tombs. The rocky ridge that shuts in the plain and valley is honeycombed in its face with sepulchral grottos; in the edge of the desert are countless mummy-pits; on its surface are many built tombs. Scarcely a day's journey passes but the voyager up the Nile sees some of these; first, the great chains of the Pyramids; then, when the mountain approaches, the entrances of grottos along its face, sometimes a field of sepulchres. Numerous as are the modern tombs, they are insignificant by the side of their truly innumerable predecessors. But of all the ancient sites, Memphis has the greatest necropolis. For about fifteen miles this city of the dead extends along the edge of the Great Desert, marked from afar by the pyramids rising regally above the smaller monuments. Wherever excavations have been made, it seems as though there had been an economy of space, for there is frequently but a narrow passage between the lines of tombs. No other graveyard in Egypt rivals this. Therefore the prophet spoke of it instead of Thebes the seat of empire, or any other great town better known in Palestine. Amos again uses the inundation of the Nile, "the flood of Egypt," as a symbol of the destruc-

tion that was coming upon his land and people. (VIII. 8; IX. 5.) I have never seen any thing that so completely brought before me the idea of a destroying flood as the inundation of the Nile. The river bursts through its banks and covers the whole valley; in the midst rushes a broad turbid stream agitated by the strong north wind blowing against its current; on either side landmarks are carried away, and the villages stand like islands connected by dykes, which the water threatens to break. Until custom has used one to the scene, it is a terrible realization of the calamities of a flood. I have dwelt upon these less-known topics in preference to the histories of Joseph and Moses which have been more carefully studied. Yet both these will gain a fresh interest with those who will read them with the Egyptian monuments for illustration. There they may see the investiture of a Joseph with his badges of office, the robe of fine linen, and collar of gold; there they may see the corn carefully stored in granaries, as though for the years of famine. Such boats as the papyrus-ark of Moses are there shown, and there are foreign brickmakers under hard taskmasters. The whole series of sculptures is an unintended commentary upon, and an impartial witness to, the truth of the Bible history.

I may here mention a modern illustration. It is well-known that many ancient Egyptian customs are yet observed. Among these one of the most prominent is the wailing for the dead by the women of the household, as well as those hired to mourn. In the great cholera of 1848 I was at Cairo. This pestilence frequently follows the course of rivers. Thus, on that occasion, it ascended the Nile, and showed itself in great strength at Boolák, the port of Cairo, distant from the city a mile and a half to the westward. For some days it did not traverse this space. Every evening at sunset, it was our custom to go up to the terrace on the roof of our house. There, in that calm still time, I heard each night the wail of the women of Boolák for their dead borne along in a great wave of sound a distance of two miles, the lamentation of a city stricken with pestilence. So, when the first-born were smitten, "there was a great cry in Egypt; for [there was] not a house where [there was] not one dead." (Exodus XIII. 30.)

Perhaps the most important use of Egyptian archeology in reference to the Bible is the manner in which it illustrates the fulfillment of prophecy. Here, again, I know that many, wearied by the rash and presumptuous interpretations of prophecy which have of late years abounded, will object to the very discussion of the subject. Yet if they acknowledge the truth of the Bible, they

must be prepared to give a reverent consideration to the prophecies it contains. The belief in the inspiration of these prophecies is a necessary consequence of a belief in the truth of the Bible. There is no middle course—a prophecy must either be authoritative or an imposture.

In consequence of the uncritical mode in which prophecy has been studied, this branch of Biblical inquiry has been neglected by many who have not felt any doubt as to the authenticity of the Scriptures, and others have adopted views of the nature of sacred prophecy in some degree tending to lower its dignity, and to weaken the evidence of its Divine origin. Thus Professor Stanley, avoiding the rocks on which Keith ran his vessel, steers into very doubtful shallows. He thus writes in the preface to his *Sinai and Palestine*:—

“Those who visit or describe the scenes of sacred history, expressly for the sake of finding confirmations of Scripture, are often tempted to mislead themselves and others by involuntary exaggeration or invention. But this danger ought not to prevent us from thankfully welcoming any such evidences as can truly be found to the faithfulness of the sacred records.

One such aid is sometimes sought in the supposed fulfilment of ancient prophecies by the appearance which some of the sites of Syrian or Arabian cities present to the modern traveller. But, as a general rule, these attempts are only mischievous to the cause which they intend to uphold. The present aspect of these sites may rather, for the most part, be hailed as a convincing proof that the spirit of prophecy is not so to be bound down. The continuous existence of Damascus and Sidon, the existing ruins of Ascalon, Petra, and Tyre, showing the revival of those cities long after the extinction of the powers which they once represented, are standing monuments of a most important truth, namely, that the warnings delivered by ‘holy men of old,’ were aimed not against stocks and stones, but then, as always, against living souls and sins, whether of men or of nations.”—P. xvi.

The principle put forth in this passage would, I think, reduce all seemingly literal prophecy to a tropical sense. The obvious answer is, How could men's souls be punished if their bodies did not suffer? how could nations be punished except by the wasting of their fields and cities? Professor Stanley's reply is a citation of the restoration of certain cities, some yet standing, which were once denounced as to be utterly destroyed. The prophecies, however, either did not speak of their final ruin, or else did not declare the impending calamities to be the last that should fall upon them. Ascalon, Petra, and Tyre, if not at once destroyed, certainly virtually perished many centuries ago. Jerusalem is still a city; but where has prophecy been more literally fulfilled than in the obliteration

of her old monuments in the time of desolation that followed the capture by Titus? The cases of Damascus and Sidon are, I frankly acknowledge, more difficult of explanation. Yet if we admit the veracity of what sacred history relates as to the fall of the one, and profane history as to that of the other, there seems to be a sufficient answer to the requirements of the case. Very often the dissociation of people and city might be reasonably supposed to relieve the latter from the curse that fell on it for the punishment of its inhabitants. Damascus, be it remembered, was Syrian, and for centuries has been Arab. Who rebuilt it we know not, after the Assyrians had destroyed it; but in St. Paul's time it was ruled by an Arab prince; and from the earlier days of Mohammedanism it has been a seat of Arab power. The case of Petra is well worth looking into. There the full measure of punishment came surely, if it tarried long. First the Idumæans were driven into their rocky fastnesses, there for a while to resist the power of Greece and Rome. Even then, however, the dominant race, that of the Nabathæans, appears to have been not Edomite but Arab. But for centuries past, probably for full eighteen hundred years, the Edomite race has disappeared, and the only population of its mountain and valley has been a colony descended from its hereditary enemies. Some have cavilled at there being now a scanty peasant-population of the valley of Petra. But these very peasants are called “the children of Israel,” Benee-Israelael, and I find in their existence a confirmation of the truth of the Bible-narrative which relates the settling of a band of Simeonites, in Hezekiah's time, in Mount Seir (1 Chron. iv. 42, 43), no less than a fulfilment of the prophecy that Israelites, apparently the most southern, should hold “the Mount of Esau.” (Obadiah 19.

I think that here we have witnesses enough to justify our maintaining those rules of interpretation which a long series of great divines has upheld. Let Egypt supply a fresh test, Egypt of which each site has been well explored, and of which the post-biblical history presents few gaps. As I travelled through the country I was very much struck by the utter ruin of some cities and towns, and the long continuance of others, when all the advantages of position and ancient importance have been in favor of the former. I have unridled this difficulty by the prophecies relating to them. For instance, it is said of Memphis, “Noph shall be waste and desolate, without an inhabitant” (Jer. xlv. 19); and “Thus saith the Lord God, I will also destroy the idols, and I will cause [their] images to cease out of Noph.” (Ezek. xxx.

13.) Except Saïs, Memphis, the greatest city of Egypt, is alone unmarked by the ruins of temples. The remains are utterly insignificant, although the tombs are great and extensive enough to show the size and wealth of the city. So, too, of Thebes it is prophesied, "No shall be rent asunder" (Ezek. xxx. 16), which may merely refer to the distress of its people; but when we stand amid its ruins, torn by a great earthquake, of which Eusebius has preserved the record, we incline to the literal interpretation. Nowhere else in Egypt has the solid masonry of the temples been thus destroyed. Still more distinct are the prophecies of the drying of the Red Sea, which has taken place since the latest date to which perverted ingenuity has endeavored to bring down the prophetic writings. "The Lord shall utterly destroy the tongue of the Egyptian sea." (Isaiah xi. 15.) "The waters shall fail from the sea." (Isaiah xix. 5.) In the last two thousand years the head of the Gulf of Suez has retired some twenty miles. Who can look at that dried-up bed and doubt "the sure word of prophecy?" So is the failure of the Nile foretold (Isaiah xix. 5), and, apparently, also the destruction of its seven streams (xi. 15), although the latter passage may mean not that the Egyptian river should be smitten in "the seven streams," but that "the river," that is Euphrates,

should be smitten "into seven streams." In any case, the Nile in the Delta has so failed, that now the only navigable branches are the two that were formerly artificial canals, so that the seven streams are fordable. Not less definite are the prophecies of the failure of the papyrus and other reeds, and the flax, the destruction of the fisheries, and the consequent ruin of the main branches of Egyptian industry. (Isaiah xix.) Not less remarkable is the exact fulfilment of these predictions. The papyrus is unknown in Egypt, the reeds are no longer a feature of its vegetation, English cotton is sold in its streets in the place of its once famous fine linen, and its fisheries can scarcely support the half-savage population of a small district. In the political history, the one prophecy that "There shall be no more a prince of the land of Egypt" (Ezek. xxx. 13), has been literally fulfilled in the stranger rule that has been the curse of the country since the second Persian conquest, more than two thousand years ago.

Egyptian archæology has had the reputation of being a narrow and fruitless pursuit. I have endeavored to show that, if rightly prosecuted, it has the highest human interest. In these days of contest, so important a province should not be left to those who are indifferent or hostile to the best purpose of honest and earnest inquiry.

**CROPSEY'S VIEW OF THE HUDSON.** One of the most beautiful pictures of the season is *not* in the exhibition of the Royal Academy. It is a large landscape painting, by Jasper Cropsey, representing a view on the Hudson river, from the heights above one of the small towns upon its banks. The spectator stands high up, and somewhat back, upon a wooded hill with an opening before him, through which is a broad view of the river; the land descending from the foreground to the nearest bank, which is, however, quite in the distance. The time is autumn, and the foliage of the tall trees and tangled underwood, intermingles a brilliant green with colors of red and yellow that vie in richness and intensity with the hue of flowers. Every one who has visited America knows how glowing is the scenery,—how it altogether surpasses the experience of Europe, and would seem to those who have seen no more than the picture exaggerated. In the painting before us, however, it is generally agreed that the painter has rather subdued these brilliant tones than otherwise. The country is seen under a vivid sun.

The subject is treated with great skill. With a sharp eye and a firm hand, Mr. Cropsey is enabled to seize the precise forms of organic life, or the broken ground, in all their variety and force; and the effect of air is conveyed by the movement in the atmosphere above, by the smoke

which goes dancing from the steamer's funnel, and by the endless change of tint which prevades the entire scene. Still, as in nature, the varying forms and countless tints of innumerable glancing shadows viewed under one sun by one pair of eyes, are blended into a harmonious whole. There is complete life and thorough repose.

One little trait will illustrate the completeness with which the work is done; it is a test which we have often applied to pictures, and very seldom found them answer to it. In nature, the forms of the foliage, the position of the tree-trunks, the leaves and the flower-stems, will be found to present an endless variety of direction. The landscape painter too often suffers his hand to fall into a pattern: if any variety be introduced, the variations are repeated at certain intervals; and an *inorganic* mechanism may be detected at a glance. There is nothing of the kind in Mr. Cropsey's picture. It is this, as well as the force and freedom of the coloring, which makes you feel that placed before the canvas, you stand upon the wooded height, looking over the vast expanse of the Hudson valley, breathing the very air of that magnificent region. The painter's magic makes the room wall open, and the possessor of the picture becomes owner of one of the loveliest and grandest estates in which eye can revel.—*Spectator*.



## THE ELDER'S DAUGHTER.

Cast her forth in her shame;  
 She is no daughter of mine;  
 We had an honest name,  
 All of our house and line;  
 And she has brought us to shame.  
 What are you whispering there,  
 Parleying with sin at the door?  
 I have no blessing for her;  
 She is dead to me evermore:—  
 Dead! would to God that she were!  
 Dead! and the grass o'er her head!  
 There is no shame in dying;  
 They were wholesome tears we shed  
 Where all her little sisters are lying;  
 And the love of them is not dead.  
 I did not curse her, did I?  
 I meant not that, O Lord!  
 We are cursed enough already;  
 Let her go with never a word:—  
 I have blessed her often already.  
 You are the mother that bore her,  
 I do not blame you for weeping;  
 They had all gone before her,  
 And she had our hearts a-keeping;  
 And oh the love that we bore her!  
 I thought that she was like you;  
 I thought that the light in her face  
 Was the youth and the morning dew,  
 And the winsome look of grace:  
 But she was never like you.  
 Is the night dark and wild?  
 Dark is the way of sin—  
 The way of an erring child,  
 Dark without and within.—  
 And tell me not she was beguiled.  
 What should beguile her, truly?  
 Did we not bless them both?  
 There was gold between them duly,  
 And we blessed their plighted troth;  
 Though I never liked him truly.  
 Let us read a word from the Book;  
 I think that my eyes grow dim;—  
 She used to sit in the nook  
 There by the side of him,  
 And hand me the holy Book.  
 I wot not what ails me to-night;  
 I cannot lay hold on a text.  
 O Jesus! guide me aright,  
 For my soul is sore perplexed,  
 And the Book seems dark as the night.  
 And the night is stormy and dark;  
 And dark is the way of sin;  
 And the stream will be swollen too; and hark,  
 How the water roars in the Lynn!—  
 It's an ugly ford in the dark.  
 What did you say? To-night  
 Might she sleep in her little bed?—

Her bed so pure and white!  
 How often I've thought and said  
 They were both so pure and white!  
 But that was a lie—for she  
 Was a whited sepulchre;  
 Yet oh! she was white to me,  
 And I've buried my heart in her;  
 And it's dead wherever she be.  
 Nay, she never could lay her head  
 Again in the little white room  
 Where all her little sisters were laid;  
 She would see them still in the gloom,  
 All chaste and pure—but dead.  
 We will go altogether,  
 She, and you, and I;  
 There's the black peat-hag 'mong the heather,  
 Where we could all of us lie,  
 And bury our shame together.  
 Any foul place will do  
 For a grave to us now in our shame:—  
 She may lie with me and you,  
 But she shall not sleep with them,  
 And the dust of my fathers too.  
 Is it sin, you say, I have spoken?  
 I know not; my head feels strange;  
 And something in me is broken;  
 Lord, is it the coming change?  
 Forgive the word I have spoken.  
 I scarce know what I have said;  
 Was I hard on her for her fall?  
 That was wrong; but the rest were dead,  
 And I loved her more than them all—  
 For she heired all the love of the dead.  
 One by one as they died,  
 The love that was owing to them  
 Centred on her at my side;  
 And then she brought us to shame,  
 And broke the crown of my pride.  
 Lord, pardon mine erring child!  
 Do we not all of us err?  
 Dark was my heart and wild;  
 Oh, might I but look on her  
 Once more, my lost loved child!  
 For I thought, not long ago,  
 That I was in Abraham's bosom,  
 And she lifted a face of woe,  
 Like some pale, withered blossom,  
 Out of the depths below.  
 Do not say, when I am gone,  
 That she brought my gray hairs to the grave  
 Women do that; but let her alone;  
 She'll have sorrow enough to brave;  
 That would turn her heart into stone.  
 Is that her hand in mine?  
 Now, give me thine, sweet wife:  
 I thank thee, Lord, for this grace of thine,  
 And light, and peace, and life;  
 And she is thine and mine.  
 —Macmillan's Magazine.

ORWELL.

From The Press.

## METAPHYSICS.

WE are frequently told that we live in a very materialistic age, which, where it is not wholly absorbed in pleasure and amusement, only cares about intellectual exertion in its bearing on political objects or the pursuit of wealth. Our ears, it is said, are stuffed with cotton, and thereby dead to the "voices of the Infinite," and regardless of all the great problems of the soul and the universe. In spite of all this, however, metaphysics continue to flourish and abound, and as they excite controversy, we conclude that they find readers. Those who are inclined to take a gloomy view of the fortunes of abstract thought, may be re-assured when they see the number of works devoted to it which are constantly appearing. The circles made by Mr. Mansel's plunge into that "Parson's Pleasure," the "Limits of Religious Thought," are still spreading. To Mr. Maurice has succeeded as a critic of that work Dr. John Young, who takes the field in a book entitled "The Province of Reason." Mr. Mansel's article on "Metaphysics," in the *Encyclopædia Britannica*, is also about to appear in a separate form. The Bampton lecturer's metaphysical opinions are also the subject of a chapter in Dr. Whewell's "Philosophy of Discovery," which forms the concluding portion of his great work on the Inductive Sciences in general. The Master of Trinity has also nearly ready a second volume of his "Platonic Dialogues for English Readers"—and Oxford adds her quota to the appreciation of the academic sage through Mr. Poste, of Oriel, who has lately published a translation of the *Philebus*. Scotland is represented by Dr. McCosh, who has brought out a large volume of the "Intuitions of the Mind." Mr. Bains' Psychology forms the subject of an article in the new number of the *National Review*. Mr. Craik appears with an enlarged and revised edition of his Introduction to Bacon (our

interest about whom is at the present day purely of a speculative kind); and the University of Dublin, seldom behindhand in matters of pure philosophy, is to be represented by the Rev. J. Macmahon's "Treatise on Metaphysics, chiefly in connection with Revealed Religion."—What degree of interest on the part of the *general* public this metaphysic crop really represents, it is difficult to say, because readers are now so numerous, and the quantity of books published so far beyond any one's power to keep up with, that there has come to be a special public for every thing. The question, however, is likely to be tested by Mr. Herbert Spencer, who has issued proposals for publishing, *by subscription*, a connected series of philosophical works, to form a complete system. London readers would not expect such a project to succeed, but they are perhaps unaware what a considerable following Mr. Spencer has in the provinces. At Bradford, for instance, as we hear, he is a sort of Pope—enjoying a reputation like Voltaire's at the time when that potentate's influence was greatest. No thinker, except perhaps Mr. Mill, is considered worthy of being placed anywhere near him; and even the latter philosopher's views are now, probably, not so palatable as formerly to the thorough-going advocates of universal suffrage and redistribution of landed property. While we are on the subject of metaphysics, we will take an opportunity of suggesting a reprint in this line to some (in both senses) *speculative* publisher. Mr. Bohn has issued a translation of Kant's *Kritik*, but readers often require some additional help besides a translator's notes. We wonder that no one has thought of republishing in a separate volume Mr. Wigram's articles on Kant, which appeared many years since in the *Encyclopædia Londinensis*. They form the easiest introduction to the German philosopher with which we are acquainted.

**ARSENIC IN AGRICULTURAL PLANTS.**—Dr. E. W. Davy has detected arsenic in peas, cabbages, and Swedish turnips, which had been manured with superphosphate of lime. This fertilizer is very extensively manufactured in England, especially for use on the turnip crop, from various phosphatic minerals, and from bones, by the help of arsenical oil of vitriol.

The arsenic, being thus proved to enter vegetation, may very easily and naturally pass into animals, and be retained in their organism. This is another striking, presumptive proof of the worthlessness of that toxicological evidence which hangs a man on the strength of minute traces of arsenic being found in working up several pounds of flesh and viscera.

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THE KOOLAGH: OR, SNOWSTORM AT  
ERZROOM.

BY THE REV. JOSEPH WOLFF, D.D., LL.D.

It was in the month of December, 1843, that I left Trebizond for Erzroom, on my way to Bokhara for the second time, the object now being to ascertain the fate of Colonel Stoddart and Captain Conolly. I was going thither in the character of an English dervish—a holy man, whom even the most barbarous eastern tribes were likely to respect, and allow to pass unmolested; and therefore my dress consisted of a clergyman's preaching gown, a doctor's hood, and shovel hat. Our small party included only three souls, viz., an excellent Tartar, who was sent with me by the pacha of Trebizond; his servant Michalovitch, who was a Russian; and myself. The distance betwixt Trebizond and Erzroom is about one hundred and fifteen miles; and in summer the journey may be performed in four days; in the depth of winter, however, it is very different; and we were more or less wading, from the 1st to the 10th of December, up to our necks in snow, before we reached our place of destination.

On our way we lodged, at night, in the abodes of the poor mountaineers, in huts and occasional small villages. Some of these people being Turks, and some Armenians, who received us very kindly in their meagre, but not uncomfortable, homes; where, fatigued with travelling on horseback, which never suited me, and almost frozen to death, I was thankful to lie down and rest, and have the provisions we had brought with us cooked in their simple way.

During the journey, we passed through the Armenian town of Goomish-khanah, where there are silver mines; and the bishop hospitably entertained us there; and another time we rested at the house of an Armenian merchant, who enlivened our evening with the timbrel and dance. We also halted at Bayboot, where the reception was not so friendly; for an Armenian, recently come from Jerusalem where the English bishopric had just been established, spread a suspicion that this had been done with a view to uproot the Armenian Church there. On reaching Erzroom, I was received with open arms in the houses of my English friends, Mr. Brandt the consul, Colonels Williams\* and Farrant, Mr. and Mrs. Redhouse, and the Hon. Robert Curzon; and the last named gentleman being very ill at this time, I visited him, and administered the Holy Communion to him.

\* Now Sir William Fenwick Williams, of Kars, Bart.

The city of Erzroom, with about forty thousand inhabitants, stands on level ground about six thousand feet above the sea. It is situated at the foot of Mount Ararat, surrounded by a mountainous range, and is approached by narrow passes, often with precipices at the side, into which, when the frozen snow lies deep, the traveller and his mule by a single false step disappear forever. The climate of Erzroom experiences the two extremes of heat and cold; and the temperature in winter freezes the breath of the traveller into icicles, which rattle on his beard and moustache.

In addition to the kindness which I received from my countrymen at Erzroom, the Pasha Al-Haj-Khaleel-Kamelee called on me, and said he should not allow me to spend one farthing in travelling through the province; and so my Christmas was most agreeably passed, and I intended to resume my journey towards Persia in the beginning of January. But on the day of my intended departure, before I set out—very early in the morning—a caravan of Persian merchants, with sixty mules laden with goods, and accompanied by a French physician who was employed in the Turkish service, and was on his way to Bayazeed, started on their road, whilst I was to follow them about noon, when the weather, which had been threatening, was expected to have cleared up. According to this advice and arrangement of my friends, I deferred my leavetaking for a few hours, and was then accompanied to the outskirts of the town by a cavalcade, for we were all on horseback, which consisted of Colonels Williams and Farrant, Messrs. Brandt and Redhouse, and Zohrab, Mr. Brandt's dragoman, who had assembled to witness my departure, and cheer me on the road. But now, let us pause a moment at this spot outside of Erzroom, and survey the scene before us. In front was the lofty Ararat, rising to more than seventeen thousand feet (called *Agra-Dagh* by the Turks), which was split and broken by chasms and precipices on every side; and from its highest points mighty avalanches were falling, and dealing destruction on all below. It is very remarkable in this region, that so long as the skies are covered with mist, and the air blows mildly, the traveller may proceed on his way in safety; but woe to that wretched man who is caught in the midst of the mountains, when a chilling wind portends the coming storm. Soon and suddenly shrieks are heard from all sides, *koolagh, koolagh, koolagh!* which may be translated "snow-spout," and which is more sudden in its arrival, and far more dangerous in its course, than all the sammooms that ever swept the

desert. For from these the traveller can protect himself, by lying down; but not so, if overtaken by the dreadful *koolagh*. This terrific foe is no common snow-shower from the clouds, but it comes when no cloud is to be seen. The air blows intensely cold, freezing your fingers as you hold the mule's bridle, and your feet in the stirrup: and, almost instantaneously, the beast which carries you may be floundering body deep in snow, whose sharp particles, dashed against your face, cut the skin and blind the eyes; and in the next moment you may fall over a precipice and be lost.

The *koolagh* is thus caused. A great circulation of wind immediately follows upon the withdrawal of the clouds; and rushing in draughts from all sides through the clefts of the mountains, it sweeps the snow from every crevice and corner, and forming a kind of whirlwind, it carries up the frozen snow from the ground in a column, which falls and buries every thing beneath. Such is the *koolagh*, or snow-spout—the most dreadful enemy which the traveller in these parts has to encounter. When it breaks forth death stares him in the face on every side; the fearful coldness of the wind is such that he realizes Dante's idea of the death by cold in hell—that overpowering cold which destroyed an army of five hundred thousand men in Russia. The snow, congealed together, comes down upon him on all sides. He is rendered powerless in his frozen body, hands, and feet; whilst the maddened animal he rides on, rushes down the snow-filled chasm, and neither rider nor horse are ever seen again. Happier is he who is at once crushed by the mighty avalanche.

With the best hopes that I should escape any danger on my way, Colonel Williams would nevertheless not allow me to depart from Erzroom, without more protection against the inclement weather, than the clerical dress in which I had been travelling afforded. He therefore enveloped me in huge trousers, and a loose coat lined with wolf's skin: a woollen shawl was tied round my waist, and my legs were thrust into jack-boots, with fur inside that rose to my hips; and in this unmanageable dress—which I eventually discarded as soon as I was out of sight of my friends, and fairly set off on my journey—I was now sitting on horseback with the rest, whilst Colonel Williams ex-

claimed, "I will give you a toast, in Tenedos wine, which we will drink with three times three—Wolff's health! and a happy journey, and safe return to him from Bokhara!" The colonel then filled his glass, and began "Hip! hip!"—but before the word was thrice repeated, the sky broke out clear, the chilling wind burst forth, and shrieks from the town, from the adjoining houses, and from the escort of soldiers, "*koolagh! koolagh! koolagh!*" announced the presence of the dreadful visitant.

All of us had but one instant allowed for slipping into shelter, before the "snow-spout" had arrived with all its desolating strength. The whole town was at once so completely buried in snow, that when, in a few minutes, I sought to regain my lodgings which were close at hand, I could not reach them till after a struggle of two hours through the frozen mass, which filled the streets. Three days after this occurrence, the dead bodies of the merchants and the French physician who had gone out of the town in the morning of the day on which I intended to start, were brought back; but very little of their merchandize could be recovered.

In a few days I proceeded on my journey, divested of my snow dress, and arrived safely at the monastery of Kara-Kleesia, near which one hundred and twenty four thousand Armenians were baptized by the great Gregory Lusawritsh, who founded both that, and the monastery of Etsh-Miazin. And thanks be to thee, good Gregory Lusawritsh—justly called Lusawritsh, which means "the Enlightener,"—for thou didst enlighten King Tirtat, and thy nation with the light of the gospel! Yes, again, I thank thee, thou founder and builder of the monastery of Kara-Kleesia, for what could I have done in my journey, when I arrived at the spot, where thy house of pious hospitality stands, if this monument of thy love had not been at hand to receive me: for there again—the second time—I heard the shrieks, "*Koolagh! koolagh!*" and had only just time to reach the homestead of the worthy monks, who recognized and welcomed their old friend Joseph Wolff.

Traveller, remember, and be on your guard at Sultaniah; nor venture to travel there, as I did, during December and January, lest you hear the shriek—the fatal shriek, "*Koolagh!*"